

UNIVERSITY OF LONDON

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REGULATIONS
FOR EXTERNAL STUDENTS
1953-54



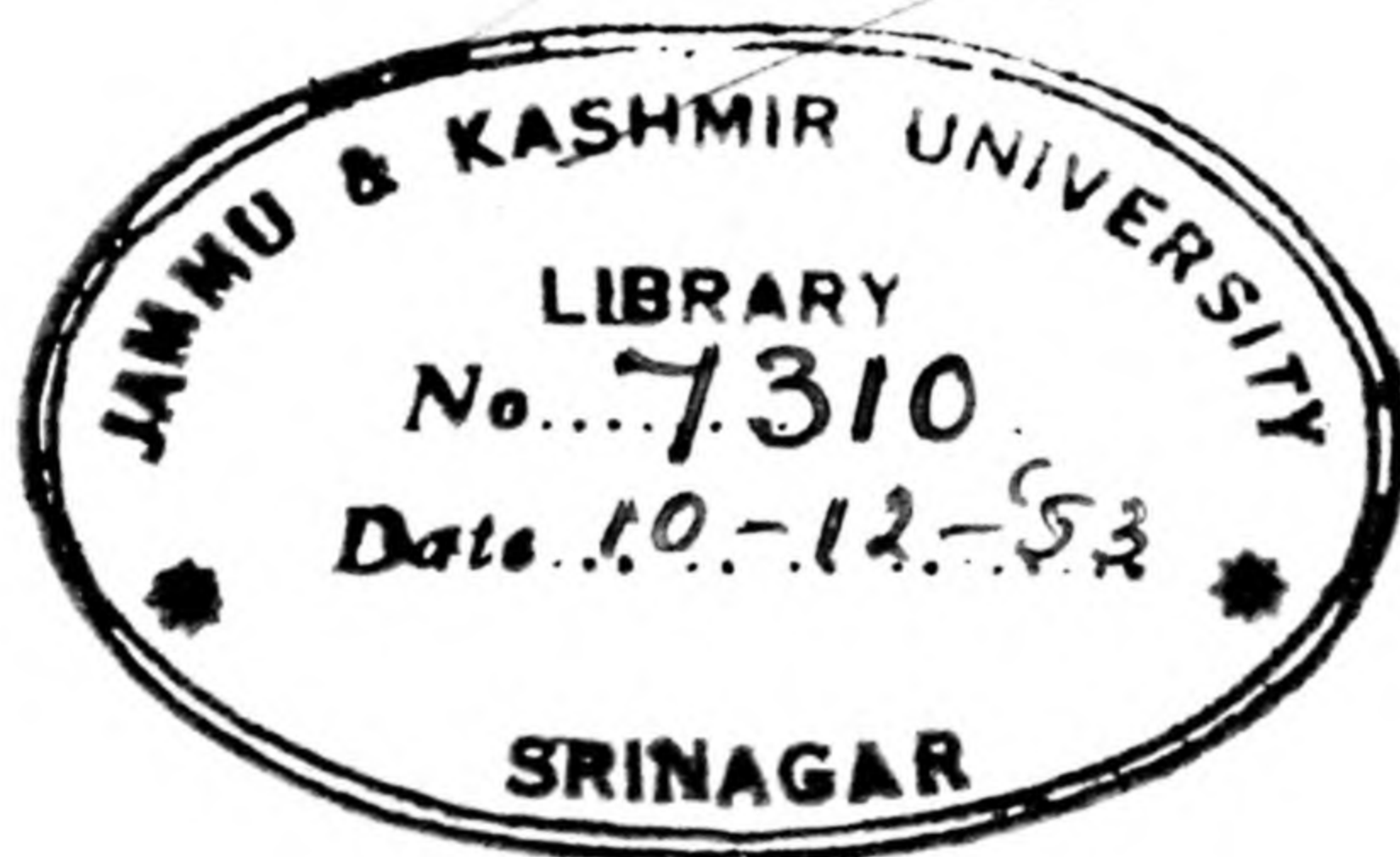
UNIVERSITY OF LONDON
SENATE HOUSE, W.C.1

1953

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UNIVERSITY OF LONDON



General Regulations for
External Students

SESSION 1953-54

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General Regulations for External Students

I. Faculties and Degrees

The following are the Faculties of the University and the Degrees conferred therein :—

Faculty of Theology	—	Bachelor of Divinity (B.D.) Master of Theology (M.Th.) Doctor of Divinity (D.D.)
Faculty of Arts	—	Bachelor of Arts (B.A.) Bachelor of Arts in Architecture Master of Arts (M.A.) Master of Arts in Architecture Doctor of Literature (D.Lit.)
Faculty of Laws	—	Bachelor of Laws (LL.B.) Master of Laws (LL.M.) Doctor of Laws (LL.D.)
Faculty of Music	—	Bachelor of Music (B.Mus.) Doctor of Music (D.Mus.)
Faculty of Medicine	—	Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.) Bachelor of Dental Surgery (B.D.S.) Bachelor of Pharmacy (B.Pharm.) Bachelor of Veterinary Medicine (B.Vet.Med.) (<i>Internal only</i>) Doctor of Medicine (M.D.) Master of Surgery (M.S.) Master of Dental Surgery (M.D.S.) (<i>Internal only</i>)
Faculty of Science	—	Bachelor of Science (B.Sc.) Bachelor of Science (Agriculture) (B.Sc. (Agric.)) Bachelor of Science (Horticulture) (B.Sc. (Hort.)) Bachelor of Science (Household Science) (B.Sc. (Household Science)) (<i>Internal only</i>) Bachelor of Science (Nutrition) (B.Sc. (Nutrition)) (<i>Internal only</i>) Master of Science (M.Sc.) Master of Science (Agriculture) (M.Sc. (Agric.)) Doctor of Science (D.Sc.)
Faculty of Engineering	—	Bachelor of Science (Engineering) (B.Sc. (Eng.)) Bachelor of Science (Engineering) in Chemical Engineering (B.Sc. (Eng.)) Bachelor of Science (Engineering) in Mining (B.Sc. (Eng.)) Bachelor of Science (Engineering) in Metallurgy (B.Sc. (Eng.)) Master of Science (Engineering) (M.Sc. (Eng.)) Doctor of Science (Engineering) (D.Sc. (Eng.))

Faculty of Economics	—	Bachelor of Science (Economics) (B.Sc. (Econ.))
		Bachelor of Science (Sociology) (B.Sc. (Soc.))
		Bachelor of Science (Estate Management) (B.Sc. (Est. Man.))
		Bachelor of Commerce (B.Com.) (up to 1954 only)
		Master of Science (Economics) (M.Sc. (Econ.))
		Master of Science (Estate Management) (M.Sc. (Est. Man.))
		Doctor of Science (Economics) (D.Sc. (Econ.))

The Degree of Doctor of Philosophy (Ph.D.) is conferred in all Faculties, but in the Faculty of Medicine it is conferred in non-clinical medicine only.

2. Overseas Examinations

The General Regulations, and the Regulations for particular Degree or Diploma Examinations are modified in certain respects for Examinations held at Overseas Centres for External Students of the University.

These modifications which affect dates of entry, examination fees, procedure for entry to examinations and, in some cases the syllabus for the examination, are contained in the pamphlet entitled "General Conditions and Special Regulations for Examinations held Overseas for External Students" which may be obtained from the External Registrar.

Any student who is proposing to present himself for a University Examination at an Overseas Centre must obtain a copy of this pamphlet and must comply with these Special Regulations in all respects.

3. Matriculation and Entry to University Faculties

1. In order to be admitted to the University as a Matriculated External Student, a candidate must :—

- (i) be at least 17 years of age ;
- (ii) satisfy the University's minimum entrance requirements as they now stand (see paragraph 2 below), unless he has been registered as a matriculated student under the Regulations in force until 30 April, 1951.

The term "Matriculation," as applied to External Students, means first registration as an External Student for a degree or for a diploma or certificate approved for the purpose by the Senate of the University. The Matriculation Examination was held for the last time in 1951, and the Special University Entrance Examination in May 1951.

2. A Certificate awarded by an approved examining body on the Examination for the General Certificate of Education (which may be taken by candidates at Schools approved for the purpose or by private candidates) will be accepted as satisfying minimum entrance requirements if it complies with the conditions of Scheme A or Scheme B :

Scheme A : Passes (not necessarily on the same occasion) in six subjects. At least two of these subjects must be at Advanced Level. The six subjects must include (a) English, (b) a language other than English, (c) Mathematics or an approved scientific subject.

Scheme B : Passes in *five* subjects, which must include (a) English, (b) a language other than English, (c) Mathematics or an approved scientific subject. Three of these subjects must be passed on the same occasion, and of these three, two must be at the Advanced Level.

Under both Schemes there are certain detailed restrictions as to choice of subjects. There are special provisions for more mature candidates, for holders of certain National Certificates, and for candidates whose native language is not English. Full details concerning these and other related questions and on registration procedure are contained in a pamphlet entitled "Regulations relating to University Entrance Requirements and conditions of Matriculation," obtainable from the Secretary to the University Entrance and School Examinations Council, University of London, Senate House, W.C.1.

3. In addition to University minimum entrance requirements, candidates for entry to certain Faculties must satisfy the relevant Faculty requirements. These are as follows :—

Theology.—No additional Faculty requirements.

Arts.—Applicants must have passed in two languages other than English at Ordinary or Advanced Level ; one, at least, of the two languages must be a Classical language (normally Latin or Classical Greek). [*Note*.—In and after 1954, languages at Ordinary Level will not be accepted for this purpose unless the syllabus provides for compulsory translation from English into the language.]

A candidate who is a native of Asia or of Africa and is not of European or American parentage and whose mother tongue cannot be offered as a subject at the General Certificate of Education Examination (or other examination approved by the University for the purpose of matriculation) must fulfil the normal requirements for entry into the Faculty as given above,

or have obtained a pass at Ordinary or Advanced Level in a Classical language and at Advanced Level in English at an approved General Certificate of Education Examination,

or (in the case of a candidate who has obtained Certificate(s) in School or other Examinations prior to 1951)

have obtained a pass at not less than minimum University entrance level in a Classical language at the examination recognised by the University for the purpose of his matriculation and a pass in English at Main Standard at an approved Higher School Certificate Examination.

Laws.—Applicants who have satisfied the minimum University entrance requirements are deemed to have satisfied Faculty requirements for the LL.B. Degree. Applicants who have not yet satisfied minimum entrance requirements are advised to offer English History where it is practicable for them to do so.

Music.—Applicants must have passed at Ordinary or Advanced Level in a modern foreign language. [*Note*.—In and after 1954, languages at Ordinary Level will not be accepted for this purpose unless the syllabus provides for compulsory translation from English into the language.]

Medicine.—Applicants will be required to have passed in Physics and Chemistry at Ordinary or Advanced Level.

Science and Engineering.—Applicants must have passed in Mathematics at Ordinary or Advanced Level.

Economics.—No additional Faculty requirements.

4. Possession of a Higher School Certificate or of the General Certificate of Education (Advanced Level) may, furthermore, qualify a student

for exemption, either complete or partial, from the Intermediate, Preliminary, or First Examination for the Bachelor's Degree in certain Faculties. Application for such exemption must be submitted on the appropriate form which may be obtained from the External Registrar. For full details, see the "Exemptions Pamphlet," obtainable from the External Registrar, University of London, Senate House, W.C.1.

4. Registration of Students

External Students are registered in one or other of the following classes :—

- (1) Students registered in accordance with the following conditions:—
 - (i) as having satisfied University Entrance and Faculty requirements ; and
 - (ii) as pursuing a course of study for a first degree, diploma or postgraduate certificate of the University.
- (2) Advanced Students registered in accordance with the following conditions :—
 - (i) as having passed approved examinations required for a degree in another university ; and
 - (ii) as having satisfied University Entrance requirements ; and
 - (iii) as pursuing a course of study for a first degree of the University.

[For *Regulations for Advanced Students*, see p. x.]
- (3) Postgraduate Students registered in accordance with the following conditions :—
 - (i) as having passed the examinations required for an Internal or an External degree of the University ; and
 - (ii) as pursuing a course of study for a Master's or Ph.D. degree.

[See *Regulations for Master's Degrees and Ph.D. Degree.*]

5. Registration

1. On and after 1 May, 1951, the Regulations for External Students relating to Registration were altered, but students who had been registered before 1 May, 1951, for examinations under the old system will, for the present, be permitted to complete their studies under this system. A student who had been registered on some previous occasion and whose registration has lapsed, or a student who had completed one examination under the old system of registration and who applies for re-registration for a further examination, will, however, be required to comply with the Regulations in force at the time of his application.

2. On and after 1 May, 1951, a student may not matriculate unless and until he registers as an Internal or as an External Student of the University. No person will be permitted to matriculate until he has attained the age of 17.

3. A student who is not already matriculated in the University will be required to supply, at the time of his application for registration as an External Student, a certificate from the Secretary to the University Entrance and School Examinations Council that he has satisfied the minimum entrance requirements of the University and that he is eligible to apply for registration as an Internal or as an External Student. No application for registration will be considered until this certificate is supplied.

4. Students registering between 1 September and 31 December will be matriculated as from 1 September ; those registering between 1 January and 30 April will be matriculated as from 1 January ; and those registering between 1 May and 31 August will be matriculated as from 1 May.

5. A student whose 17th birthday falls within the period 1 September to 31 December and who registers will be matriculated as from 1 September ; a student whose 17th birthday falls within the period 1 January to 30 April and who registers will be matriculated as from 1 January ; and a student whose 17th birthday falls within the period 1 May to 31 August and who registers will be matriculated as from 1 May.

6. In each case the date of registration which will be stated on the Certificate of Registration to be issued to each External Student will be the same as the date of matriculation.

7. On and after 1 May, 1951, a student who registers for the first time as an External Student will be required to comply with the minimum University and Faculty entrance requirements and to pay a fee of £5 5s. This fee will include the fee which was formerly paid for registration as a matriculated student of the University and also the fees formerly paid for registration for the Intermediate, Preliminary or First Examination and for the Final, Diploma or Postgraduate Certificate Examination.

8. A student who is already matriculated in the University and who registers as an External Student for a Degree, or a Diploma or for the Postgraduate Certificate of Education will be required to pay a fee of £2 2s. which will include the fees formerly paid for registration for the Intermediate, Preliminary or First Examination and for the Final, or Diploma or Postgraduate Certificate Examination.

9. The Statutes of the University prescribe that an interval of three years must elapse between the date of matriculation of a student and the conferring of a degree but the Senate may in exceptional circumstances dispense with the full period of three years between matriculation and the conferring of a first degree in the case of External Students. Each application for the remission of interval between matriculation and entry to a Final Examination is considered on its merits and a student is required to produce satisfactory evidence that he has completed an appropriate course of study for the Final Examination and that he has observed the correct interval between examinations as required by the Regulations.

10. An External Student who has been registered under the new Regulations on or after 1 May, 1951, will be permitted to proceed to the appropriate Intermediate, Preliminary or First Examination (if he is not already fully exempted or if he does not hold appropriate qualifications for Direct Entry to a Final Examination) without further formality. He will not be required, as in the past, to register for the particular examination which he proposes to enter, but he will be required to make his application for entry to any such Intermediate, Preliminary or First Examination in strict accordance with the Regulations and to submit his entry by the date prescribed in the Regulations for the Examination.

Regulations Governing Registration of External Students.

Note.—The following Regulations apply to all students taking External Examinations, with the exception that students taking Intermediate, Preliminary or First Examinations at Overseas Centres who were registered as matriculated students of the University on or before 30 April, 1951, will not be required to register again as External Students before entry to such examinations.

Statutory Requirement.—The University Statutes define an External Student as a person who has matriculated in the University and has been registered as preparing for an examination within the purview of the Council for External Students.

Matriculation.—With the exception of those persons who were registered as matriculated students of the University on or before 30 April, 1951, a student who produces satisfactory evidence that he has fulfilled the minimum entrance requirements of the University will be matriculated on registration.

Registration Form.—Every student who intends to proceed to a Degree, or a Diploma or the Postgraduate Certificate of Education as an External Student must make an application for registration on the appropriate form which must be received at the University, together with the registration fee, on or before the date prescribed in the Regulations.

Concurrent Registration.—No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

No registered External Student will be permitted to proceed concurrently to more than one examination except with the permission of the Council for External Students.

Registration Fees:—

- (i) The fee for registration as an External Student proceeding to a first Degree or to a Diploma or to the Postgraduate Certificate of Education is £5 5s. except in the case of a student who has been registered as a matriculated student of the University on or before 30 April, 1951, when the fee is £2 2s.
- (ii) A registered Internal Student who, on cancellation of his Internal Registration, subsequently registers as an External Student proceeding to a first Degree or to a Diploma or to the Postgraduate Certificate of Education shall be required to pay a fee of £2 2s.
- (iii) The fee for registration as an External Student proceeding to any Higher Degree Examination is £2 2s.
- (iv) Registration fees are not returnable in any circumstances.

Late Registration.—Provided that the Council is satisfied about the reasons for failure to register by the prescribed date, registration may be accepted after the prescribed date on the payment of a Late Fee of £2 2s. In no case will registration be accepted later than one month before the last date of entry to an Intermediate, Preliminary or First Examination or three months before the last date of entry to a Final Examination.

Notification of Registration.—An official notification of registration will be issued and any student who has not received a communication within 14 days of posting his application should write immediately to the External Registrar giving details of his application and stating when and where it was posted.

6. Approval of Candidature

Regulations Governing Admission of External Students to Final Examinations and to Examinations for Diplomas and the Postgraduate Certificate of Education.

1. On completion of the required Intermediate, Preliminary or First Examination, or on obtaining the required qualifications for Direct Entry or for complete exemption from such an examination, each registered External Student will be required to apply for and obtain approval of his candidature for the appropriate Final Examination, or,

in the case of a Final Examination divided into two or more Parts, for each Part of the Final Examination, in accordance with the Regulations for Approval of Candidature. Approval of Candidature for any Final Examination or for any Diploma Examination or for the Postgraduate Certificate of Education must be obtained not later than the date prescribed in the Regulations for the examination concerned.

2. The procedure for obtaining approval of candidature for a Final or a Diploma Examination or for the Postgraduate Certificate of Education Examination is very similar to the procedure under the old Regulations for Registration for a Final or for a Diploma Examination, but a separate fee will no longer be charged except in the case of late applications.

Registration.—Each candidate for admission to an Examination leading to an External Degree, or a Diploma or the Postgraduate Certificate of Education is required to be a registered External Student.

Application.—Each candidate must make application for permission to proceed to a specified examination in specified subjects on the appropriate form which must be received at the University on or before the date prescribed in the Regulations.

Concurrent Entry.—No candidate will be permitted to proceed concurrently to more than one examination unless permission has been granted by the Council for External Students.

Provisional Application.—Normally a candidate will be granted permission to proceed to any particular examination only if he has completed the required preceding examination. A candidate who contemplates entry to an examination but who has not completed the required preceding examination may, with the permission of the Council, be accepted provisionally.

Late Application.—Provided that the Council is satisfied about the reasons for failure to make application for permission by the prescribed date, application may be accepted after the prescribed date, on payment of a Late Fee of £1 1s. In no case will an application be accepted later than one month before the last date for entry to the examination.

Notification of Approval.—An official notification of approval of candidature will be issued stating the examination and the subjects to be offered at that examination. A candidate who has not received a communication within 14 days of posting his application should write immediately to the External Registrar giving details of his application and stating when and where it was posted.

Modification of Application.—Provided that the Council is satisfied about the reasons for the changes, a student may be permitted to modify his application. Any modification of a student's application must be made in writing not less than three calendar months before the last date of entry to the examination.

Transfer.—Application for permission to proceed to an examination does not commit the candidate to enter for the examination on the date chosen or at all. He may have his application transferred to a subsequent date provided that a notification is sent to the External Registrar not later than one month after the last date of entry.

Renewal of Application.—A candidate who enters for the examination for which he has been granted permission to proceed and who withdraws, fails or is referred, will be required to re-apply for permission to proceed to a subsequent examination, not later than three months after the publication of the Pass List.

Lapsed Applications.—Candidates who do not complete the examination for which they have been granted permission to proceed, and

who fail to transfer or re-apply for a subsequent examination will be deemed to have allowed their applications to lapse. Should they subsequently propose to proceed to an External Examination they will be required to submit a new application and to pay a renewal fee of £1 1s.

Entry to Examination.—Permission to proceed to an examination does not constitute entry to the examination. To enter for any examination forming part of the Degree, a Diploma or the Postgraduate Certificate of Education for which he is registered and for which his candidature has been approved, the student must obtain the appropriate entry papers and return them to the University together with the examination fee on or before the prescribed date as stated in the Regulations.

7. Academic Year

The word “year” when used without limitation means a calendar year.

By the term “academic year” is ordinarily meant the period intervening between any Examination and an Examination of the next higher grade in the following year; which period may be either *more* or *less* than a calendar year.

8. Communications from University

Communications sent from the University to an individual student must be regarded as applying to that student only.

9. Examinations at Provincial Centres

Any College or Institution may apply to the University for the establishment of a local centre for one or more of the examinations for External Students. Each application should be addressed to the External Registrar and is subject to approval by the Council for External Students and by the Senate.

An application for the establishment of a local centre made by an individual student or by a group of students will not be considered by the University, but in certain circumstances a student who by reason of some physical handicap is prevented from attending for examination in London or at an approved local centre, may apply to the University for special arrangements to be made. Any application of this nature should be addressed in the first instance to the Superintendent of Examinations, The Senate House, University of London, W.C.1.

All examinations which are held at local centres are held on the same dates and at the same times as the examinations in London. Candidates take the same examination papers and their scripts are marked by the same examiners.

Practical and Oral examinations cannot necessarily be taken at centres which are approved by the University for the written part of those examinations which require a Practical or Oral test. The Council for External Students reviews each year the arrangements made for Practical and Oral examinations at local centres and a separate list of centres approved for Practical and Oral tests at Intermediate Examinations is published in March and may be obtained on application to the External Registrar. In addition, the Programme of Examinations which is issued to each candidate entering for each examination gives details of the local centres at which the examinations may be taken and in cases where a practical or oral test is involved, indicates the centres approved for those tests.

The local fee which is payable for entry to an examination held at a local centre is *in addition* to the normal University fee for that examination. This local fee must be paid to the centre or to the College, Institution or other Authority responsible for the centre and *must not* be sent to the University either with the entry fee for the examination or subsequently. The local fee must be paid in accordance with the instructions issued by the Authority responsible for the centre and the University does not undertake any responsibility whatever either for the amount of the fee charged or for the collection or refund of such fees.

Candidates who take examinations at local centres must take care to ascertain from the Examination Programme the correct address of the Examination Hall.

Details of the various approved Provincial Centres and the local fees which are payable, are contained in the pamphlet entitled "Examinations for External Students at Provincial Centres," which may be obtained from the External Registrar.

10. Return of Examination Fees

DIPLOMA AND FIRST DEGREE EXAMINATIONS

(Including Intermediate, Preliminary and First and Second Examinations and the Postgraduate Certificate in Education)

1. Registration Fees and Special Fees are not returnable.
2. Examination Fees cannot be transferred from one Examination to a later one, and the full Examination Fee will be payable by a candidate at any subsequent entry, which must be made by the date given in the Regulations.
3. A candidate whose provisional entry for an examination is accepted pending the result of an earlier examination and who is subsequently found to be ineligible or is not required to sit for the second examination may receive back the fee paid less £1 1s.
4. A candidate who withdraws from the examination before the last date of entry may receive back the fee paid less £1 1s. No refund will be made of entry fees of £1 1s. or less.
5. A candidate who withdraws from the examination after the last date of entry but not later than the date for refund specified in the Regulations for that examination may receive back half the fee paid or, where this fee is more than £6 6s., he may receive back the fee paid less £3 3s. No refund will be made of entry fees of £1 1s. or less.
6. No entry fee that has been paid by or on behalf of a candidate for an Examination held in the United Kingdom will be refunded, except in cases provided for in paragraphs 3, 4 and 5 (above) or for one of the following reasons :—

(a) *Inability to take the examination owing to candidate's illness, or to death of parent :—*

The Principal may at his discretion and on receipt of medical evidence satisfactory to him return the examination fee paid.

In cases of infectious illness of a person with whom the candidate has been in contact, the Principal may at his discretion return the whole examination fee paid.

A medical certificate certifying illness at the time of the examination must be sent with any application.

(b) *Inability to take the examination by reason of National Service :—*

A candidate who is prevented from sitting by approved

National Service may, at the discretion of the Principal, have his entry fee returned in full.

A certificate certifying employment on National Service at the time of the examination must be sent with any application.

(c) *Death of Candidate* :—

Entry fee returnable in full.

7. Application for return of fees should be addressed to the Superintendent of Examinations, University of London, Senate House, W.C.I. Candidates should state whether they are Internal, External, or Extension students, and from which Examination they are withdrawing.

Application must be made not later than one month after the commencement of the examination.

MASTERS' AND M.D. DEGREE EXAMINATIONS

1. A candidate who withdraws from an examination before the last day of entry shall receive back the examination fee paid.

2. A candidate who withdraws from an examination after the last day of entry for reasons other than those set out in 3 below, or who fails to present his thesis (or dissertation) by a specified date at a Master's Degree Examination, shall receive back the entry fee paid less £2 2s.

3. The entry fee paid shall be returned in the following cases :—

(a) *Inability to take the examination owing to candidate's illness or to death of near relative.*

A medical certificate certifying illness at the time of the examination must be sent with any application.

(b) *Inability to take the examination by reason of National Service.*

(c) *Death of candidate.*

4. A candidate whose provisional entry for an examination is accepted pending the result of an earlier examination and who is subsequently found to be ineligible or is not required to sit for the second examination shall receive back the fee paid less £1 1s.

II. Theses for Higher Degrees

Theses shall be deposited in the University Library and shall be open for public reference, and a register shall be kept in which the names of persons referring to these Theses shall be entered.

REGULATIONS FOR ADVANCED STUDENTS PROCEEDING TO A BACHELOR'S DEGREE

1. Persons who have passed approved examinations required for a degree in another University may apply for permission to proceed to a First Degree in the University without their having previously satisfied the Examiners at an Intermediate, Preliminary or First Examination.

2. In the Faculty of Medicine, exemption from the First Examination for Medical Degrees, in whole or in part, and from the course of study for the Second Examination for Medical Degrees, in whole or in part, may be granted to students who have passed all the examinations for an approved Degree of another University. No exemption will be granted from the Second Examination for Medical Degrees or from any part of the clinical course.

3. In the Faculty of Science, exemption from one or more Ancillary subjects or language tests prescribed for candidates proceeding to the B.Sc. Special Degree under revised Regulations may similarly be granted, but no exemption will be granted from the subsidiary subject to a Special Degree examination held under the old Regulations.

4. As a general rule, students will be granted exemption from that part of the Intermediate, Preliminary, First or Ancillary examinations or language tests only in which they are able to produce evidence that they have attained at least the standard required of students of the University for the examination in question.

5. Students who are granted exemption from part of an Intermediate, Preliminary or First Examination will be required to complete the remaining part of the examination before they are granted permission to proceed to the Final Examination. They will be required to complete the whole of the remainder of the examination on one and the same occasion.

6. Each application must state the Degree to which the student intends to proceed. Where there is a choice of subjects, the subject(s) to be taken in the Final Examination must also be stated.

7. A student who is accepted as an Advanced Student in order to proceed to a specified Final Examination and who later wishes to change *either* the Final Examination *or* the subject(s) in the Final Examination must make a completely fresh application for consideration.

8. A student who is granted complete exemption from an Intermediate, Preliminary or First Examination will normally be permitted to enter for the Final Examination not less than two academic years after the date of his registration as an External Student. A student who is granted partial exemption from an Intermediate, Preliminary or First Examination and who is required to complete his qualification by passing in one or more subjects will normally be permitted to enter for the Final Examination not less than three academic years after the date of his registration as an External Student.

9. A student who is granted complete or partial exemption from an Intermediate, Preliminary or First Examination is required to complete his registration as an External Student for the Degree to which he proposes to proceed not later than one calendar year from the date of his acceptance as an Advanced Student.

10. A student who has been notified of his acceptance as an Advanced Student and who fails to complete his registration as an External Student within the time limit of one calendar year will be deemed to have allowed his application to lapse. If he should subsequently re-apply for admission as an Advanced Student he will be required to make a completely fresh application for consideration.

11. A student who is granted complete exemption from an Intermediate, Preliminary or First Examination or a student who has completed this qualification, is required to apply for Approval of Candidature for the Final Examination not later than one calendar year from the date of acceptance as an Advanced Student or from the date of completion of the Intermediate, Preliminary or First Examination.

12. A student who has been notified of his acceptance as an Advanced Student with complete exemption from an Intermediate, Preliminary or First Examination, or a student who has been notified of his acceptance as an Advanced Student with partial exemption and of his subsequent completion of the Intermediate, Preliminary or First Examination, who fails to apply for Approval of Candidature for the Final Examination within the time limit of one calendar year, will be deemed to have allowed his application to lapse. If he should subsequently re-apply for permission to proceed as an Advanced Student he will be required to make a completely fresh application for consideration.

13. Each application must be made on the prescribed form which may be obtained from the External Registrar.

Fees

	£	s.
1. Fees are as follows :—		
First application for admission	1	1
Balance of fee payable for Registration after acceptance:—		
(i) Non-matriculated student	4	4
(ii) Matriculated student	1	1
Application for change of Degree or subjects	1	1
Renewal of lapsed application	1	1

A student who has been granted exemption from an Ancillary subject for the B.Sc. Special Degree will be required to pay the prescribed entry fee for this subject at the time of entry to the final Part of the B.Sc. Special Examination.

2. A student who allows his application to lapse and who has not completed his registration as an External Student will be required to pay the balance of the Fee for Registration if he should subsequently apply for renewal of his application and be accepted.

ADVISORY SERVICE FOR EXTERNAL STUDENTS

Persons who propose to undertake a course of study in order to obtain a Degree or Diploma as External Students of the University of London may consult the External Registrar for information and advice.

External Students are normally expected to make their own arrangements for courses of study. Those who find difficulty in doing so may obtain advice about facilities for instruction which are already in existence. Advice may also be obtained about the most appropriate choice of subjects in a Degree course where options are available.

In approved cases a registered External Student may be provided with a study scheme for guidance in carrying out his proposed course of study. The study scheme, which has been prepared by experienced teachers, outlines an appropriate course of study for the Degree, Diploma, or the Postgraduate Certificate in Education examination, and includes suggestions for reading and other methods of study. Study schemes are not available in all subjects for all examinations, and are not usually provided for subjects in examinations where the student is required, before entry to the examination, to have completed a course of study at an Institute recognised by the University for the purposes of the examination.

For the assistance of External Students who are preparing for postgraduate examinations in which original work is required, arrangements may be made for the student to be put in touch with an Adviser who may either give an opinion on the suitability of work already in progress or assist the student to start his work on the right general lines.

Students who require advice or guidance should apply to the External Registrar by postcard for an Enquiry Form. This must be completed with full details of the facilities which the student has available and with a clear statement of the subject on which advice or guidance is required. All communications from students seeking advice will be treated as confidential, and replies will be given on the clear understanding that they will be treated as personal to the student to whom they are addressed. The advice which is given will represent the opinion of the Adviser concerned in each case according to the particular circumstances of the student concerned, and must not be taken to be an official pronouncement by the University.

Advice will normally be given by correspondence, but students who are able to attend for an interview at the Senate House should ask for an appointment when forwarding the completed Enquiry Form. An

interview will not, normally, be arranged until an Enquiry Form has been completed and full information supplied by the student.

No fees are charged to students for advice, guidance or study schemes provided through the Advisory Service for External Students.

The following Vacation Courses are normally held each year, and Vacation Courses in other subjects may be considered from time to time if the demand for them should justify making the necessary arrangements :—

French	for Intermediate Arts, B.A. General, B.A. Honours, Preliminary Economics, B.Sc. (Economics) - Revised Regulations, and B.Com.	Easter Vacation (in London)
French	for B.A. General and B.A. Honours, but other students may be included.	Summer Vacation (in France)
Geography	Course in Field Work for B.A. General, B.A. Honours, B.Sc. General, B.Sc. Special, B.Sc. (Economics) and Diploma in Geography.	Summer Vacation (at suitable Field Work Centre or Centres)
Latin	for Intermediate Arts.	Easter Vacation (in London)
Psychology	Laboratory Course in Experimental Psychology for B.A. General, B.A. Honours, B.Sc. General and B.Sc. Special, but other students may also be included.	Summer Vacation (in London)
Social Studies	mainly for Diploma in Social Studies students, but may also be attended by students for B.Sc. (Economics) and for B.A. Honours in Sociology and for B.Sc. (Sociology).	Easter Vacation (in London)

All students whose candidature has been approved for the appropriate Degree or Diploma are notified each year of the detailed arrangements for the Vacation Course or Courses which they may wish to attend.

POSTGRADUATE STUDENTSHIPS

The following Studentships, each of the value of £250 and tenable for one year, are offered to candidates at the B.A. Honours, B.A. in Architecture, LL.B., B.Sc. (Special), B.Sc. (Eng.), and B.Sc. (Economics) Examination for Internal and External Students, and at the Examination for the Diploma in Fine Art (*for Internal Students only*).

Arthur Platt Studentship in Classics.

Derby Studentship in History.

George Smith Studentship in English (*for Internal Students only*).

Granville Studentship in Physics.

Sherbrooke Studentship in Mathematics.

Neil Arnott Studentship in Chemistry.

Gerstenberg Studentship in Economics.

Two Studentships for Classics.

Three Studentships for English.

Three Studentships for History.

Four Studentships for Romance Languages.

Three Studentships for Germanic Languages.

- One Studentship for Slavonic and East European Languages.
- Two Studentships for Oriental Languages and Literatures.
- One Studentship for Sociology.
- One Studentship for Architecture *or* History of Art
- One Studentship for Philosophy.
- Two Studentships for Geography.
- One Studentship for Mathematics.
- One Studentship for Psychology.
- One Studentship for Anthropology.
- One Studentship for Laws.
- One Studentship for Chemistry.
- Two Studentships for Botany *or* Zoology.
- One Studentship for Physiology.
- One Studentship for Anatomy.
- One Studentship for Geology.
- One Studentship for Physics.
- Eight Studentships for Engineering.
- Two Studentships for Economics.
- One Studentship in Fine Art (*for Internal Students only*).

A candidate wishing to be considered for an award must make application on his entry-form for the relevant Final Examination. The names of two persons to whom reference can be made must be given and, where possible, one of the referees should be the Head of the Department in which the applicant is a student. This information must be given on the entry-form in the special place provided.

A candidate selected for an award must satisfy the University of his intention to pursue a full-time course of advanced study or research and will be required, from time to time, to present during the tenure of his Studentship such reports upon the progress of his studies as the University may determine. The holder of a Studentship will normally be required to carry out his postgraduate studies in a School or Institution of the University and to begin his studies at the beginning of the University Session following the award. In cases where this is not possible (e.g., owing to the claims of National Service) the relevant University authorities will give sympathetic consideration to any application for postponement of the tenure of the award.

The award of the above Studentships will be made by the Scholarships Committee of the University after considering reports from the relevant Examiners. Selected candidates may be required to attend for interview with the Examiners. Expenses incurred by candidates in attending such interviews cannot be refunded by the University.

CENTRAL RESEARCH FUND

A Research Fund has been instituted for the purpose of making grants to members and teachers of the University for specific projects of research, such as the provision of materials and apparatus, and approved expenses. Applications for grants from the Research Fund will be invited through the public press and must be forwarded to the Academic Registrar so as to reach him not later than 31 March, 31 August and 30 November in each year. Awards will ordinarily be made by the Senate at their meetings in July, December and March, respectively. Detailed Regulations may be obtained from the Academic Registrar, University of London, Senate House, W.C.1.

EXAMINATION PAPERS

The following pamphlets and sets of past examination papers can be obtained from the University of London (Publications Section), Senate House, W.C.1 :—

Price Each
(Post Free)
Air Mail Extra

Faculty of Theology

Intermediate	s. d.
B.D. (Prior to 1948 M.Th. papers were included) ..	2 0
M.Th. (From 1948)	2 6
	1 6

Papers are sold in sets for any one examination.

Faculty of Arts

*Intermediate	3 0
*B.A. (General)	3 6

B.A. Honours

Sets of papers for any one examination : Classics, History, Mathematics each subject	2 0
Other subjects each	1 6

If specified, papers in one subject subsidiary to the principal subject will be supplied without additional charge.

M.A.

Sets of papers in the different subjects for any one examination each subject	1 6
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Applicants should state the subject(s) (also section or branch, if any.)

Faculty of Laws

Intermediate	1 6
LL.B.	2 0
LL.M.	1 6

Papers are sold in sets for any one examination.
Applicants should state subjects.

Faculty of Music

Intermediate, B.Mus. and D.Mus.	2 6
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Faculty of Medicine

First Medical	2 0
Second Medical	1 6
M.B., B.S. (Oct.)	1 6
M.B., B.S. (April)	1 6
M.D. (July)	1 6
M.S. (July)	1 6
M.D. (December)	1 6
M.S. (December)	1 6
Dental Surgery	2 0
B. Pharm.	2 6

Faculty of Science

Intermediate	2 6
B.Sc. (General)	3 0
B.Sc. (Special)	

Sets of papers in the different subjects for any one
examination Mathematics

Any other subject

*Only English, French, German and Spanish are included among the modern language papers in these pamphlets. Papers in all other modern languages can be obtained price 6d. each post free.

Price Each
(Post Free)
Air Mail Extra
s. d.

Faculty of Science—(continued)

If specified, papers in one subsidiary subject or two ancillary subjects will be supplied without additional charge. If three ancillary subjects are required an additional 3d. should be sent.

Neither ancillary nor subsidiary subject papers are sold separately.

M.Sc.

Sets of papers in the different subjects for any one examination each subject	1 6
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Applicants should state the subject(s) (also section or branch, if any).

Agriculture

Intermediate and B.Sc.	2 6
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Horticulture

Intermediate and B.Sc.	2 6
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Faculty of Engineering

B.Sc. (Eng.) Part I (revised Regulations). (First issued 1949.)	1 6
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B.Sc. (Eng.) Part II (revised Regulations). (First issued 1950.)	2 6
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B.Sc. (Eng.) Chemical Engineering (revised Regulations). (First issued as a separate pamphlet 1950)..	2 0
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B.Sc. (Eng.) Metallurgy (revised Regulations) ..	2 0
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M.Sc.(Eng.)

Sets of papers in the different subjects for any one examination each subject	1 6
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Applicants should state the subject(s) (also section or branch, if any).

Faculty of Economics

Preliminary	2 0
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B.Sc. (Econ.) Part I (revised Regulations)	2 0
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B.Sc. (Econ.) Part II (revised Regulations)	
Special Subjects published separately, each subject	1 6

M.Sc. (Econ.)

Sets of papers in the different subjects for any one examination each subject	1 6
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Applicants should state the subject(s) (also section or branch, if any).

Estate Management

First, Intermediate and B.Sc.	2 6
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Diplomas

Clinical Pathology (First issued 1949)	}	each	1 6
Geography			
Postgraduate Certificate in Education			
Public Administration			
Social Studies			
Theology			
Education			2 0

A complete list of examination papers published by the University may be obtained on application.

UNIVERSITY OF LONDON



GENERAL CONDITIONS AND SPECIAL REGULATIONS

FOR

EXAMINATIONS HELD OVERSEAS

for External Students

The attention of all candidates is particularly drawn to the notice overleaf.

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters, candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

SPECIAL NOTICE

The ordinary regulations for examinations held in England are applicable to all examinations held overseas unless otherwise stated in these Special Regulations.

With the temporary exception of candidates taking Intermediate, Preliminary or First Examinations at Overseas Centres, who were registered as matriculated students of the University on or before 30th April, 1951, no candidate can be admitted to any External Examination who has not previously been registered as an External Student.

Entry for an Examination to be held at an Overseas Centre does not entitle a candidate to admission to the same examination held in the United Kingdom. No candidate can be admitted to an examination for External Students in the United Kingdom, unless he has complied with all the requirements for entry there.

Before commencing a course of study with a view to taking any External Examination at an Overseas Centre candidates are strongly advised :—

- (1) To consult a current copy of the appropriate regulations.
- (2) To ascertain from the appropriate Government authorities whether or not those authorities are willing to make arrangements for the examination to be held.
- (3) If not attending a teaching institution, to consult the External Registrar regarding the best means of carrying out their studies. Such advice is given without fee.

The pass list for an examination held overseas cannot normally be published until about four months after the conclusion of the examination. The results will be communicated to candidates at the earliest possible moment through the Overseas Authority. In no circumstances will a candidate be informed of his result directly by the University.

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SECTION I

General Conditions upon which Centres are constituted and Examinations held Overseas

The examinations leading to certain External Degrees and Diplomas of the University may be held :

- (1) In Centres within the Commonwealth
 - (a) upon the general application of the Governor-General or Governor for the constitution of a centre ;
 - (b) subsequently, in relation to particular examinations, by direct communication between the University and the Department of Education or other appropriate authority of the overseas government.
- (2) In Centres outside the Commonwealth
upon the application of Her Majesty's Representative in the country concerned.

Applications for Specified Examinations

Applications by the appropriate authorities for the holding of any particular examination must reach the University not later than the dates specified in Section II below.

Each application must be accompanied by the properly completed entry-forms and the prescribed fees for all the candidates wishing to enter.

Entries

The University will accept an entry to an overseas examination only if it is received through the appropriate overseas authorities. Any person desiring to be examined at an Overseas Centre should therefore apply, not to the University, but to the Head of the Education Department of the territory in which he wishes to be examined. It is entirely at the discretion of those authorities to accept or to refuse an entry to an examination to be held in their territory from any candidate who would be eligible for admission if that examination were held in England.

Each candidate must obtain two copies of the entry form from the Overseas Authority at the centre where the examination is to be held. The two copies of the entry form must be completed in full showing the examination and subjects to be taken, and the entry forms must be returned to the Overseas Authority.

Conduct of Examinations

Each examination shall be held simultaneously with the corresponding examination in London, or, in the event of accident or unavoidable delay, as soon as possible after the arrival of the mail by which the papers are transmitted. Where any accident or delay occurs, the papers must be taken with as little deviation as possible from the dates assigned to them and the full facts reported to the External Registrar by the Supervisor at the conclusion of the examination. The University reserves the right to cancel an examination where any paper has been taken at a different time from that prescribed.

All answers to examination questions shall be written in English, unless instructions are given to the contrary.

Examination Results

The results of each examination will be communicated to the appropriate overseas authorities as soon as possible after the reports of all the examiners have been received and tabulated at the University. Upon the formal application of the appropriate authority the University is willing to despatch by cable, to the authority concerned, a preliminary announcement of the names of the candidates who have passed such examinations, but arrangements can be made only if the request is for the inclusion of the names of all successful candidates at one or more centres, and is not merely in the interests of individual candidates, and provided the authority concerned is willing to undertake to refund to the University the actual cost of the cablegram. The University cannot accept responsibility for any error or errors that may occur in transmission of such cabled messages ; the printed pass lists and failure report forms forwarded in due course must in every case be accepted as the authoritative announcement of the results of each examination, subject to subsequent approval by the Senate.

Each successful candidate at an Intermediate Examination will be supplied through the overseas authorities with a Detailed Report on his result in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass.

Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—

D—Failure ; E—Bad Failure.

Failure in a subject which includes a practical or oral examination indicates failure in the subject as a whole and no further information can be given regarding the candidate's performance in the various parts of the examination.

Detailed Result Reports for successful candidates will be sent to overseas authorities from one to two months after the publication of the ordinary Pass List, but for unsuccessful candidates at the time when they are notified of the result of the examination.

The results are not communicated direct to the candidates concerned, and enquiries regarding them should be addressed to the appropriate overseas authorities.

SECTION II

Procedure regarding Examinations that can be held Overseas

REGISTRATION AND MATRICULATION

All students who wish to proceed to a Degree or Diploma of the University of London as External Students must have satisfied minimum entrance requirements of the University and been registered as External Students before they are permitted to present themselves as candidates for any External Examination.

1. Students who had been registered as matriculated students of the University on or before 30 April, 1951, will be permitted, until further notice, to present themselves as candidates for an Intermediate, Preliminary or First Examination held Overseas without further registration as External Students, but they are strongly advised to apply to the University for registration as External Students without delay.

2. A student may not matriculate unless and until he registers as an Internal or as an External Student of the University. No person will be permitted to matriculate until he has attained the age of 17.

3. A student who is not already matriculated in the University will be required to supply, at the time of his application for registration as an External Student, a certificate from the Secretary to the University Entrance and School Examinations Council that he has satisfied the minimum entrance requirements of the University and that he is eligible to apply for registration as an Internal or as an External Student. No application for registration will be considered until this certificate is supplied.

4. Students registering between 1 September and 31 December will be matriculated as from 1 September; those registering between 1 January and 30 April will be matriculated as from 1 January and those registering between 1 May and 31 August will be matriculated as from 1 May.

5. A student whose 17th birthday falls within the period 1 September to 31 December and who registers will be matriculated as from 1 September; a student whose 17th birthday falls within the period 1 January to 30 April and who registers will be matriculated as from 1 January; and a student whose 17th birthday falls within the period 1 May to 31 August and who registers will be matriculated as from 1 May.

6. In each case the date of registration which will be stated on the Certificate of Registration to be issued to each External Student will be the same as the date of matriculation.

7. A student who registers for the first time as an External Student will be required to comply with the minimum University and Faculty entrance requirements and to pay a fee of £5 5s. This fee will include the fee which was formerly paid for registration as a matriculated student of the University and also the fees formerly paid for registration for the Intermediate, Preliminary or First Examination and for the Final or Diploma Examination.

8. A student who is already matriculated in the University and who registers as an External Student for a Degree or a Diploma will be required to pay a fee of £2 2s. which will include the fees formerly paid for registration for the Intermediate, Preliminary or First Examination and for the Final or Diploma Examination.

9. The Statutes of the University prescribe that an interval of three years must elapse between the date of matriculation of a student and the conferring of a degree but the Senate may in exceptional circumstances dispense with the full period of three years between matriculation and the conferring of a first degree in the case of External Students. Each application for the remission of interval between matriculation and entry to a Final Examination is considered on its merits and a student is required to produce satisfactory evidence that he has completed an appropriate course of study for the Final Examination and that he has observed the correct interval between examinations as required by the Regulations.

10. An External Student who is registered under the new Regulations after 1 May, 1951, will be permitted to proceed to the appropriate Intermediate, Preliminary or First Examination (if he is not already fully exempted or if he does not hold appropriate qualifications for Direct Entry to a Final Examination) without further formality. He

will not be required to register for the particular examination which he proposes to enter, but he will be required to make his application for entry to any such Intermediate, Preliminary or First Examination in strict accordance with the Regulations and to submit his entry by the date prescribed in these Regulations.

REGULATIONS GOVERNING REGISTRATION OF EXTERNAL STUDENTS

Statutory Requirement :—The University Statutes define an External Student as a person who has matriculated in the University and has been registered as preparing for an examination within the purview of the Council for External Students.

Matriculation :—With the exception of those persons who were registered as matriculated students of the University on or before 30 April, 1951, a student who produces satisfactory evidence that he has fulfilled the minimum entrance requirements of the University will be matriculated on registration.

Registration Form :—Every student who intends to proceed to a Degree or a Diploma as an External Student must make an application for registration on the appropriate form which must be received at the University, together with the registration fee, on or before the date prescribed in the Regulations.

Centre of Examination :—A candidate can be registered for examination at any particular Overseas Centre only if (1) his application is received through the appropriate authorities at that Centre and (2) those authorities are able and willing to arrange for his examination in the subjects he wishes to offer. It is entirely at the discretion of the authorities to accept or refuse the entry at an Overseas Centre of any candidate who would be eligible for admission to the examination held in England.

Change of Centre :—A candidate may transfer his registration from one Overseas Centre to another only if his application to do so is received at the University, through the appropriate authorities at the Centre to which he wishes to transfer, not later than the last date of late application. The candidate may, however, apply direct to the University if he wishes to take his examination in England.

Concurrent Registration :—No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

No registered External Student will be permitted to proceed concurrently to more than one examination except with the permission of the Council for External Students.

Registration Fees :—

- (i) The fee for registration as an External Student proceeding to a first Degree or to a Diploma is £5 5s. except in the case of a student who has been registered as a matriculated student of the University on or before 30 April, 1951, when the fee is £2 2s.
- (ii) A registered Internal Student who, on cancellation of his Internal Registration, subsequently registers as an External Student proceeding to a first Degree or to a Diploma shall be required to pay a fee of £2 2s.

- (iii) The fee for registration as an External Student proceeding to any Higher Degree Examination is £2 2s.
- (iv) Registration fees are not returnable in any circumstances.

Late Registration :—Provided that the Council are satisfied about the reasons for failure to register by the prescribed date, registration may be accepted after the prescribed date on the payment of a Late Fee of £2 2s. In no case will registration be accepted later than one month before the last date of entry to an Intermediate, Preliminary or First Examination or three months before the last date of entry to a Final Examination.

Notification of Registration :—An official notification of registration will be issued and any student who has not received a communication within 28 days of posting his application should write immediately to the External Registrar giving details of his application and stating when and where it was posted.

APPROVAL OF CANDIDATURE

On completion of the required Intermediate, Preliminary or First Examination, or on obtaining the required qualifications for Direct Entry or for complete exemption from such an examination, each registered External Student will be required to apply for and obtain approval of his candidature for the appropriate Final Examination, or, in the case of a Final Examination divided into two or more Parts, for each Part of the Final Examination, in accordance with the Regulations for Approval of Candidature. Approval of Candidature for any Final Examination or for any Diploma Examination must be obtained not later than the date prescribed in the Regulations for the examination concerned.

The procedure for obtaining Approval of Candidature for a Final or a Diploma Examination will be very similar to the procedure under the old Regulations for Registration for a Final or for a Diploma Examination, but a separate fee will no longer be charged except in the case of late applications.

REGULATIONS GOVERNING ADMISSION OF EXTERNAL STUDENTS TO FINAL EXAMINATIONS AND TO EXAMINATIONS FOR DIPLOMAS

APPROVAL OF CANDIDATURE

Registration :—Each candidate for admission to an Examination leading to an External Degree or a Diploma is required to be a registered External Student.

Application :—Each candidate must make application for permission to proceed to a specified examination in specified subjects on the appropriate form which must be received at the University on or before the date prescribed in the Regulations and must be submitted through the appropriate Overseas Authorities.

Concurrent Entry :—No candidate will be permitted to proceed concurrently to more than one examination unless permission has been granted by the Council for External Students.

Provisional Application :—Normally a candidate will be granted permission to proceed to any particular examination only if he has completed the required preceding examination. A candidate who

contemplates entry to an examination but who has not completed the required preceding examination may, with the permission of the Council, be accepted provisionally.

Late Application :—Provided that the Council are satisfied about the reasons for failure to make application for permission by the prescribed date, application may be accepted after the prescribed date, on payment of a Late Fee of £1 1s. In no case will an application be accepted later than one month before the last date for entry to the examination.

Notification of Approval :—An official notification of approval of candidature will be issued stating the examination and the subjects to be offered at that examination. A candidate who has not received a communication within 28 days of posting his application should write immediately to the External Registrar giving details of his application and stating when and where it was posted.

Modification of Application :—Provided that the Council are satisfied about the reasons for the changes, a student may be permitted to modify his application. Any modification of a student's application must be made in writing not less than three calendar months before the last date of entry to the examination.

Transfer :—Application for permission to proceed to an examination does not commit the candidate to enter for the examination on the date chosen or at all. He may have his application transferred to a subsequent date provided that a notification is sent to the External Registrar not later than one month after the last date of entry.

Renewal of Application :—A candidate who enters for the examination for which he has been granted permission to proceed and who withdraws, fails or is referred, will be required to re-apply for permission to proceed to a subsequent examination, not later than three months after the publication of the Pass List.

Lapsed Applications :—Candidates who do not complete the examination for which they have been granted permission to proceed and who fail to transfer or re-apply for a subsequent examination will be deemed to have allowed their applications to lapse. Should they subsequently propose to proceed to an External Examination they will be required to submit a new application and to pay a renewal fee of £1 1s.

Entry to Examination :—Permission to proceed to an examination does not constitute entry to the examination. To enter for any examination forming part of the Degree or Diploma for which he is registered and for which his candidature has been approved, the student must obtain entry forms and return them to the Overseas Authority together with the examination fee on or before the prescribed date.

EXAMINATIONS THAT MAY BE HELD OVERSEAS

Candidates must comply with the regulations for registration and Approval of Candidature.

Intermediate Divinity, B.D. and Diploma in Theology.

Intermediate Arts, subject to the conditions set out below for oral and practical examinations.

B.A. General, subject to the conditions set out below for oral and practical examinations.

B.A. Honours in Mathematics. The Examination in Advanced Subjects (up to 1955 only) may also be held under certain conditions. Applications should be addressed to the External Registrar, and should state the groups the candidate desires to offer.

B.A. Honours in Classics, Latin, Greek, English (provided the Special Subject "Phonetics" be not offered), **Philosophy and Geography**. The examinations for B.A. Honours in other **Modern Languages** can be held only at Centres where approved arrangements have been made with regard to the oral portions of the examinations. (See below.)

B.A. Honours in History. Applications must be addressed to the External Registrar, and must contain complete details as to the branch and all special or optional subjects selected under the various sections of the regulations, which it is desired to offer.

B.A. Honours in certain Oriental languages, provided satisfactory arrangements can be made for the particular year for which application is made. Applications should be addressed to the External Registrar.

B.A. Honours in Sociology and in History of Art, subject to approval by the University of the candidate's course of study.

Diploma in Geography.

Diploma in Education.

Intermediate and Final Examinations in Laws.

Intermediate Music.

First Medical, subject to the conditions set out below regarding the practical examinations involved.

Intermediate Science and B.Sc. General, subject in every case to the conditions set out below regarding any practical examinations involved.

B.Sc. Special. Except in **Mathematics** (*see* below) and in **Geography**, arrangements can only be made for holding examinations for the B.Sc. Special Degree in exceptional circumstances.

B.Sc. Special in Mathematics. The Examination in Advanced Subjects (up to 1955 only) may also be held, under certain conditions. Applications should be addressed to the External Registrar, and should state the groups the candidate desires to offer.

B.Sc. (Eng.) provided the candidate has attended a course of study at one of the institutions specially approved by the University for the purpose.

Preliminary and Final Examinations in Economics, subject to the conditions set out below for oral examinations.

Final Examinations in Commerce (1954 only) subject to the conditions set out below for oral examinations.

Diploma in Public Administration.

M.Th., M.A., LL.M., M.Sc. and M.Sc. (Econ.) Examinations, so far as they require neither a practical test nor the submission of a thesis. Where there is an oral examination the examiners may, after consideration of a candidate's written papers and/or dissertation, set a further written paper or papers in lieu of the oral examination. The M.A. in Mediaeval and Modern Languages may be held only at Centres where suitable arrangements can be made for the oral test.

ORAL EXAMINATIONS

An entry for an examination in a language for which the Regulations require an oral test to be held will not be accepted unless the University has approved the appointment of an Assistant Examiner to conduct the oral test at the centre at which the examination is to be conducted.

Candidates are warned that it is much more difficult to arrange for an oral test to be held Overseas for a Final Examination than for an Intermediate Examination, and that it is very rarely possible for arrangements to be made for an oral test in a subject in the Final Honours Examinations.

PRACTICAL EXAMINATIONS

An entry for an examination in a science subject for which the Regulations require a practical examination in addition to written work will not be accepted unless the University has (i) approved the laboratory or laboratories in which the practical examination is to be held and (ii) approved the appointment of Assistant Examiners to conduct the practical examination at the centre.

Candidates are warned that it is much more difficult to arrange for a practical examination to be held Overseas for a Final Examination than for an Intermediate Examination, and that it is very rarely possible for arrangements to be made for a practical examination in a subject in the Final Special Examinations.

PROCEDURE FOR ENTRY TO EXAMINATIONS

Authorities to whom Application must be made

The University cannot consider applications from individual candidates or their teachers.

No entry will be accepted unless received through the appropriate overseas authority ; and it is entirely at the discretion of any overseas authority to accept or to refuse an entry to an examination to be held in its territory from any candidate who would be eligible for admission to that examination held in England. Any person desiring to be examined at an Overseas Centre should therefore apply, not to the University, but to the Head of the Education Department of the territory in which he wishes to be examined, or, for Centres outside the Commonwealth, to the British Council Representative, where there is one, or where there is not, to Her Majesty's Representative in the country concerned.

In the under-mentioned cases, applications should be addressed as indicated :—

Aden, the Director of Education, Aden.

Antigua, the Inspector of Schools, Education Department, St. John's, Antigua.

Bahamas, the Director of Education, Nassau, N.P., Bahamas.

Barbados, the Director of Education, Department of Education, Garrison, Barbados.

Bermuda, the Director of Education, Department of Education, Hamilton, Bermuda.

British Guiana, the Examinations Secretary, Education Department, Georgetown, Demerara.

British Honduras, the Director of Education, Education Offices, Belize, British Honduras.

Burma, The British Council Representative, c/o The British Embassy, Rangoon, Burma.

Canada, the Head of the Education Department of the particular province in which the candidate desires to be examined. The

Education Departments are situated as follows :—Alberta, Edmonton ; British Columbia, Victoria ; Manitoba, Winnipeg ; New Brunswick, Fredericton ; Newfoundland, St. Johns ; Nova Scotia, Halifax ; Ontario, Toronto ; Prince Edward Island, Charlottetown ; the Province of Quebec, Quebec ; Saskatchewan, Regina.

Ceylon, the Commissioner of Examinations, Department of Examinations, Malay Street, Colombo, 2, Ceylon.

Cyprus, the Director of Education, Education Office, Nicosia, Cyprus.

Dominica, the Education Officer, Education Department, Dominica, B.W.I.

Egypt, the Examinations Secretary, The British Council, 22, Sharia Adly Pasha, Cairo, Egypt.

Fiji, the Director of Education, Department of Education, Suva, Fiji.

Gambia, the Director of Education, Department of Education, Bathurst, Gambia.

Gibraltar, the Director of Education, Education Department, Gibraltar.

Grenada, the Inspector of Schools, Information Office, St. George's, Grenada, B.W.I.

Gold Coast, the Registrar, West African Examinations Council, P.O. Box 917, Accra, Gold Coast.

Hongkong, the Director of Education, Education Department, Hongkong.

Iraq, the Representative, The British Council, King Ali Bridge Street, Rashid Street, Baghdad, Iraq.

Israel, The Representative, The British Council, 27, Allenby Road, Tel Aviv, Israel.

Jamaica, the Secretary, Education Authority, Education Office, Kingston, Jamaica.

Jordan, The Representative, The British Council, Wadi Seer Street, Amman, Jordan.

Kenya, the Director of Education, Department of Education, Nairobi, Kenya.

Lebanon, The Representative, The British Council, Beit Kurani, Sh. Ma'mari, Beirut, Lebanon.

Malaya, the Examinations Secretary, Department of Education, Kuala Lumpur, Federation of Malaya.

Malta, the Director of Education, Education Office, Valetta, Malta, G.C.

Mauritius, the Director of Education, Rose Hill, Mauritius.

Montserrat, The Headmaster, Montserrat Secondary School, Plymouth, Montserrat, B.W.I.

New South Wales, the Director General of Education, Department of Education, Sydney.

New Zealand, the Director of Education, Education Department, Wellington, C.I.

Nigeria, the Inspector General of Education, Headquarters, Education Department (Examinations Branch), Lagos, Nigeria.

Northern Rhodesia, the Director of Education, Department of European Education, Lusaka, Northern Rhodesia.

Nyasaland, the Director of Education, Zomba, Nyasaland.

Queensland, the Director-General of Education, Department of Public Instruction, Brisbane, Queensland.

St. Kitts, the Inspector of Schools, Education Office, St. Kitts, B.W.I.

St. Lucia, the Education Officer, Education Office, Castries, St. Lucia, B.W.I.

St. Vincent, the Administrator, Government Office, Kingstown, St. Vincent, B.W.I.

Sarawak, the Director of Education, Kuching, Sarawak.

Seychelles, the Director of Education, Seychelles.

Sierra Leone, the Director of Education, Department of Education, Freetown, Sierra Leone.

Singapore, the Examination Secretary, Department of Education, Singapore.

Southern Rhodesia, the Chief Education Officer, Education Department, Salisbury, Southern Rhodesia.

Sudan, the Director of Education, Ministry of Education, Khartoum, Sudan.

Switzerland, The Representative, The British Council, Stockenstrasse 4, Zurich, Switzerland.

Tanganyika, the Director of Education, Dar-es-Salaam, Tanganyika Territory.

Trinidad, the Superintendent of Examinations, Department of Education, Port of Spain, Trinidad.

Uganda, the Director of Education, Department of Education, Kampala, Uganda.

The Union of South Africa, the Secretary for Education (Examinations), Union Department of Education, Pretoria, South Africa.

Victoria, the Registrar, University of Melbourne, Carlton N.3, Victoria.

Virgin Islands, the Supervisor of Education, Education Department Tortola, British Virgin Islands.

Zanzibar, the Director of Education, Department of Education, Zanzibar.

Examinations for Service Candidates.—Candidates serving in the Army or Air Force overseas or on board any of H.M. Ships, and wishing to be examined at their Service Stations, should apply to the External Registrar for details of examinations which may be so held and for instructions regarding entry.

Dates for Receipt of Entries

All entries must be received at the University, through the overseas authorities, as follows :—

- | | |
|--|------------------------|
| (1) For Intermediate, Preliminary and First Examinations (other than Laws and Music), and for Diploma examinations (other than the Diploma in Education) | not later than March 1 |
| (2) For Intermediate Examinations in Laws and Music | not later than July 1 |
| (3) For referred subject of Intermediate examination to be taken with LL.B., Part I | not later than Feb. 1 |
| (4) For Diploma in Education | not later than Jan. 1 |
| (5) For Final Examinations (other than Mathematics, Advanced Subjects at B.A. Honours and B.Sc. Special) | not later than Feb. 1 |
| (6) For Mathematics, Advanced Subjects at B.A. Honours and B.Sc. Special | not later than Jan. 1 |
| (7) For Master's Degrees, except LL.M. and M.Sc. in History and Philosophy of Science | not later than Dec. 1 |
| (8) For LL.M. and M.Sc. History and Philosophy of Science | not later than April 1 |

Information that must be Supplied

Before formal application is made by the Overseas Authority, the candidate must :-

(1) satisfy the Overseas Authority as to his *full and correct name* and that he is qualified for admission to the examination. In every case, the candidate's names must be given in full and must correspond exactly in order and spelling with the name under which he was entered upon the University's register of matriculated students on or before 30 April, 1951, or on the register of External Students after that date ;

(2) complete in duplicate an entry-form (to be obtained from the Overseas Authority) stating precisely the branch of the examination, the optional and/or special subjects, if any, and, where a choice of subjects or of papers is permitted, the alternative selected, e.g., Pure or Applied Mathematics ;

(3) if any candidate claims exemption from any subject, give full details of the exempting examination, its date and the Centre at which it was held.

Payment of University Fees

When making application as above, each candidate must pay to the Overseas Authority the appropriate University fee ; see Section III.

No entry fee paid for an External Examination by a candidate who later withdraws from or for any reason fails to present himself for the examination will be refunded, except that a candidate who after entry for an examination learns that he is ineligible to sit owing to the result of a previous examination of this University will be given a refund of his fee less £1 1s.

In all cases, the refunds provided for above will be made through the appropriate overseas authorities.

Fees are not transferable from one examination to another or from one occasion to another. A candidate withdrawing from an examination and wishing to enter for a later examination must make an entirely fresh entry in regard to fee as in other respects.

[*Note.*—The fees referred to above are those due to the University under the relevant regulations ; candidates may be required by the local authorities to pay an additional fee to cover the local expenses of the examination, which in every case must be borne by the candidates concerned, unless otherwise provided for by the overseas authority making application. When an examination includes an oral or practical test, the cost of the test must be included in the "local expenses." For information as to the local fees charged at any Centre, application must be made to the appropriate overseas authority.]

SECTION III**Special Regulations****INTERMEDIATE, PRELIMINARY
AND FIRST EXAMINATIONS**

These Examinations are held at Overseas Centres in June and July of each year, with the exception of Laws which is held in September, and of Music which is held in December.

Examination Fees

The fees for each examination are the same as those shown in the ordinary regulations for each Faculty, plus an additional fee for taking an examination overseas as follows :—

	£	s.	d.
Whole examination	1	1	0
Referred subject		10	6
Supplementary subjects or subjects to complete exemption, up to half the subjects of the examination		10	6
more than half the subjects of the examination	1	1	0

INTERMEDIATE EXAMINATION IN ARTS

Subjects involving practical work or oral tests can be taken only at those Centres where arrangements for such work have been specially sanctioned by the University.

Special Languages

A candidate wishing to offer a Classical language other than Latin or Greek (Classical) (*see* Scheme of Examination, Intermediate Arts Regulations) must forward with his entry documentary evidence, or a definite statement by the appropriate authorities that satisfactory evidence has been submitted.

The entry of any candidate who offers any language other than Latin, Greek, English, French, German, Spanish, Pali, Sanskrit, Sinhalese or Tamil must reach the University not less than *five* months before the commencement of the examination to which it relates.

Alternative Subjects and Syllabuses**(I) ADVANCED MODERN ENGLISH**

Candidates in Ceylon, the Gold Coast and Malaya (incl. Singapore) may offer Advanced Modern English instead of English.

The syllabus is as follows :—

[Two papers.]

I.—History of English literature from 1660 to 1900, with special study of set books.

II.—Shakespeare, with selected plays to be specially studied.

Set Books : 1954 :

Shakespeare : *Merchant of Venice* ; *Macbeth* ; *Antony and Cleopatra*.

Milton : *Comus* ; *Paradise Lost*, Book IV.

Swift : *Gulliver's Travels*, Voyages I and II.

Gray : *Prose and Poetry* (Clarendon Press).

Shelley : *Prometheus Unbound* ; *Adonais*.

Conrad : *The Rover*.

Hardy : *Far From the Madding Crowd*.

Set Books : 1955 :

Shakespeare : *Midsummer Night's Dream* ; *Richard II* ; *King Lear*.

Milton : *Samson Agonistes*.

Pope : *Rape of the Lock*.

Johnson : *Rasselas*.

Shelley : *Prometheus Unbound* ; *Adonais*.

Thackeray : *Henry Esmond*.

Hardy : *The Mayor of Casterbridge*.

Set Books : 1956 (provisional only, subject to confirmation in September 1954) :

Shakespeare : *Henry IV*, Part I ; *Twelfth Night* ; *Winter's Tale*.

Milton : *Paradise Lost*, I and II.

Pope : *Epistle to Dr. Arbuthnot*.

Goldsmith : *Selected Essays* (ed. Lobban, Cambridge University Press).

Wordsworth : *Prelude*, I and II.

George Eliot : *Adam Bede*.

Hardy : *The Trumpet Major*.

(2) GEOGRAPHY

Candidates in Africa taking the subject Geography at the Intermediate Examination in Arts may select three of the following Regions instead of the three Regions specified in the Regulations for Paper 2 (Regional Geography) :—

(a) Africa, South of the Sahara.

(b) Europe, with special reference to the British Isles, France, Germany, Italy, Switzerland and Scandinavia.

(c) North America, with special reference to the north-eastern industrial areas, and the United States east of the Mississippi.

(d) The Monsoon lands, with special reference to the Indian Sub-Continent.

(3) BIOLOGY, BOTANY AND ZOOLOGY

For syllabuses in Biology, Botany and Zoology at approved Centres, see below, under Intermediate Science Examination.

INTERMEDIATE EXAMINATION IN MUSIC

Oral Examination

An additional written paper will be set in place of the oral examination normally prescribed.

FIRST EXAMINATION FOR MEDICAL DEGREES

This examination may be held only at those Centres at which arrangements for the conduct of the practical work involved have been sanctioned by the University.

GENERAL BIOLOGY

The following local types have been approved :—

For candidates in British Guiana :—

For <i>Lumbricus</i>	—	Local worm (<i>Pheretima</i> possibly)
<i>Scyllium</i>	—	A young shark
<i>Rana</i>	—	<i>Bufo maritima</i>
<i>Lepus</i>	—	A rat
<i>Lilium</i>	—	Amaryllidaceae
<i>Ranunculus</i>	—	Malvaceae
<i>Pisum</i>	—	Leguminosae.

For candidates in Ceylon :—

For <i>Lumbricus</i>	—	<i>Pheretima</i>
<i>Scyllium</i>	—	<i>Scoliodon</i> (<i>Carcharias</i>)
<i>Rana</i>	—	<i>Bufo</i>
<i>Lepus</i>	—	<i>Rattus</i> .

For candidates in the Gold Coast :—

For Frog	—	<i>Bufo</i>
Dogfish	—	Shark
Rabbit	—	Cavy
<i>Chlamydomonas</i>		Any green flagellate
<i>Pleurococcus</i>	—	<i>Scenedesmus</i>
<i>Pythian</i>	—	<i>Phytophthora</i>
<i>Mucor</i>	—	<i>Rhizopus</i>
<i>Fucus</i>	—	<i>Sargassum</i>
<i>Lilium</i>	—	Aloe or <i>Hippeastrum</i>
<i>Ranunculus</i>	—	<i>Hibiscus</i>
<i>Pisum</i>	—	<i>Crotalaria</i> .

For candidates in Jamaica :—

For Earthworm	—	<i>Lumbricus terrestris</i> or a local species
Dogfish	—	A young shark
Frog	—	<i>Bufo marinus</i> .

For candidates in Mauritius :—

For <i>Fucus</i>	—	<i>Sargassum</i>
<i>Ranunculus</i>	—	<i>Upomea</i>
Dogfish	—	A young shark
Earthworm	—	A local earthworm, e.g., <i>Pheretima</i> .

For candidates in Trinidad :—

For <i>Rana</i>	—	<i>Bufo marinus</i>
<i>Lilium</i>	—	Amaryllidaceae
<i>Ranunculus</i>	—	Malvaceae
<i>Pisum</i>	—	Leguminosae.

INTERMEDIATE EXAMINATION IN SCIENCE

This examination may be held only at those Centres at which arrangements for the conduct of the practical work involved in experimental subjects have been sanctioned by the University.

BIOLOGY

The following local types have been approved :—

For candidates in British Guiana :—

For Dogfish	—	Shark
Frog	—	Toad
Rabbit	—	Rat or Cavy
<i>Dryopteris</i>	—	<i>Adiantum</i>
<i>Pythium</i>	—	<i>Phytophthora</i>
<i>Fucus</i>	—	<i>Fucus</i> or <i>Sargassum</i> .

For candidates in Ceylon :—

For Frog	—	Toad
Rabbit	—	Rat
Cabbage white butterfly	—	The Lime butterfly.

For candidates in Kenya :—

For <i>Dryopteris</i>	—	<i>Gleichenia</i>
Cabbage white butterfly	—	A butterfly that is a pest.

For candidates in Mauritius :—

For Earthworm	—	<i>Pheretima</i>
Dogfish	—	A young shark
Frog	—	Toad
<i>Fucus</i>	—	<i>Sargassum</i>
Cabbage white butterfly	—	Citrus butterfly, <i>Papilio</i> .

For candidates in Singapore :—

For Dogfish	—	<i>Scyllium marmoratum</i>
Frog	—	<i>Bufo melanosticus</i> .

BOTANY

The syllabus is identical with that prescribed for examinations held in England, except that the section headed Special Morphology, Reproduction and Taxonomy, reads as follows :—

Special Morphology, Reproduction and Taxonomy

The general characters of the following groups :—

BACTERIA

FUNGI, especially *Mucor* or *Rhizopus* or other zygomycete ; *Eurotium* or *Nectria* or *Xylaria* ; *Saccharomyces* ; any common gill-bearing fungus and a plant pathogen.

ALGAE, especially *Chlamydomonas* or *Pleurococcus* or *Scenedesmus* ; *Spirogyra* ; *Oedogonium* or *Cladophora* or *Vaucheria* ; *Fucus* or *Sargassum* or some other member of the Fucaceae.

BRYOPHYTA, especially *Marchantia* or *Aneura* or some other Liverwort. *Polytrichum* or *Pogonatum* or *Bryum* or some other moss, the latter with special reference to its life-history and without detailed treatment of the sporophyte.

PTERIDOPHYTA, especially *Aspidium* (Dryopteris) or *Asplenium* or *Nephrolepis* or *Polypodium* or *Adiantum*, and the special features of *Selaginella*.

GYMNOSPERMS, especially *Encephalartos* or *Cycas* or *Pinus* or *Cupressus*.

ANGIOSPERMS, a study of the morphology and biology of the flower, with some training in systematic Botany such as the use of a flora. Family characters not to be emphasized.

ZOOLOGY

For Centres already approved the special syllabus is identical with that prescribed for examinations in England, except that for the types set out in Sections 1 and 2, the following local types are approved :—

For candidates in British Guiana :—

For Earthworm	—	Local worm (<i>Pheretima</i> possibly)
Crayfish	—	<i>Xiphopenaeus kroveri</i>
Dogfish	—	A young shark
Frog	—	<i>Bufo maritima</i>
Rabbit	—	A rat.

For candidates in Ceylon and Singapore :—

For Earthworm	—	<i>Pheretima</i>
Crayfish	—	<i>Penaeus</i>
Dogfish	—	<i>Scoliodon</i> (<i>Carcharias</i>)
Frog	—	<i>Bufo</i>
Rabbit	—	<i>Rattus</i> .

For candidates in the Gold Coast :—

For Frog	—	<i>Bufo</i>
Dogfish	—	Shark
Rabbit	—	Cavy
Crayfish	—	<i>Palaemon</i> sp.

For candidates in Jamaica :—

For Earthworm	—	<i>Lumbricus terrestris</i> or a local species
Dogfish	—	A young shark
Frog	—	<i>Bufo marinus</i>
Crayfish	—	<i>Atya occidentalis</i> .

For candidates in Mauritius :—

For Earthworm	—	A local earthworm, e.g., <i>Pheretima</i>
Crayfish	—	<i>Palaemon ornatus</i>
Amphioxus	—	<i>Asymmetron</i>
Dogfish	—	A young shark
Frog	—	Toad.

For candidates in Nigeria :—

For Earthworm	—	<i>Hippopera</i>
Crayfish	—	<i>Palaemon</i>
Dogfish	—	Sting Ray, <i>Trygon</i>
Frog	—	<i>Bufo</i>
Rabbit	—	Rat or Guinea Pig.

For candidates in Trinidad :—

For Frog	—	<i>Bufo marinus</i> .
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For candidates in Uganda :—

For Earthworm	—	Swampworm (<i>Alma</i>)
Crayfish	—	Crab
Dogfish	—	<i>Tilapia</i>
<i>Monocystis</i>	—	<i>Gregarina</i> .

GEOGRAPHY

Candidates in Africa taking the subject Geography at the Intermediate Examination in Science may select three of the following Regions instead of the three Regions specified in the Regulations for Paper 2 (Regional Geography) :—

- (a) Africa, South of the Sahara.
- (b) Europe, with special reference to the British Isles, France, Germany, Italy, Switzerland and Scandinavia.
- (c) North America, with special reference to the north-eastern industrial areas, and the United States east of the Mississippi.
- (d) The Monsoon lands, with special reference to the Indian Sub-Continent.

Candidates for any degree in the Faculty of Engineering are required to take Intermediate Science in the subjects Pure Mathematics, Applied Mathematics, Physics and Chemistry; or in Mathematics (Pure and Applied), Physics and Chemistry.

FINAL EXAMINATIONS

These Examinations are held at Overseas Centres in June and July of each year.

Examination Fees

The fees for each examination are the same as those shown in the ordinary regulations for each Faculty, plus an additional fee for taking an examination overseas, as follows :—

	£	s.	d.
Whole examination	1	1	0
One Part only, or One subject only		10	6

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from Intermediate, First or Preliminary Examinations will be set off against the entry fee at the time of entry for Second or Final Examinations taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from Intermediate, First or Preliminary Examinations and who paid the six guinea fee plus the overseas fees to include a first entry in one or more subjects.

B.A.

Subjects requiring oral tests can be taken only at those Centres where arrangements for such tests have been specially sanctioned by the University.

In Music an additional written paper will be set in place of the oral examination normally prescribed.

Candidates taking the B.A. Honours Examination in Philosophy at an Overseas Centre will not be required to take the oral test.

GEOGRAPHY

Candidates are required to bring to the practical examination, for transmission to London for inspection by the examiners, note-books and any other evidence that they may desire to submit of practical work carried out in the field.

B.Sc.

Subjects involving practical examinations can be taken only at those Centres where arrangements for such examinations have been specially sanctioned by the University.

(1) B.Sc. GENERAL

BOTANY

Examinations in Botany have so far been approved for only three Centres, Ceylon, Mauritius and Singapore ; the special syllabuses are as follows :—

CEYLON

Identical with that prescribed for examinations in England, except that (i) the following are inserted under Angiospermae :—

Angiosperms

Pandanaceae, Aponogetonaceae, Hydrocharitaceae, Gramineae, Cyperaceae, Palmae, Araceae, Lemnaceae, Commelinaceae, Juncaceae, Liliaceae, Amaryllidaceae, Musaceae, Cannaceae, Orchidaceae.

Urticaceae, Polygonaceae, Chenopodiaceae, Amarantaceae, Nymphaeaceae, Ranunculaceae, Anonaceae, Cruciferae, Capparidaceae, Crassulaceae, Rosaceae, Leguminosae, Oxalidaceae, Euphorbiaceae, Rutaceae, Malvaceae, Dilleniaceae, Guttiferae, Passifloraceae, Lythraceae, Myrtaceae, Melastomaceae, Ericaceae, Oleaceae, Apocynaceae, Asclepiadaceae, Convolvulaceae, Labiatae, Solanaceae, Scrophulariaceae, Acanthaceae, Rubiaceae, Cucurbitaceae, Campanulaceae, Compositae.

[*Note.*—There will always be an option of questions on the special morphology of Angiosperms (of which a selected series of families is set out above), and all candidates will be required to pass in this portion of the subject.]

and (ii) Section 6 of the syllabus reads as follows :—

6. An elementary knowledge of plant ecology, with special relation to the influence of climatic and other factors upon vegetation in Ceylon.

MAURITIUS

Identical with that prescribed for examinations held in England, except that under Angiospermae the following are inserted :—

Monocotyledons

Helobiales :—Potamogetonaceae, Hydrocharitaceae. Glumiflorae :—Gramineae, Cyperaceae. Principles :—Palmae. Spathiflorae :—Araceae, Lemnaceae. Liliflorae :—Liliaceae, Amaryllidaceae, Iridaceae. Scitamineae :—Musaceae, Zingiberaceae, Cannaceae, Marantaceae. Microspermae :—Orchidaceae.

Dicotyledons

Urticales :—Moraceae, Urticaceae. Piperales :—Piperaceae. Centrospermae :—Chenopodiaceae, Charophyllaceae. Ranales :—Nymphaeaceae, Myristicaceae, Lauraceae. Rhoeadales :—Papaveraceae, Cruciferae. Rosales :—Rosaceae, Leguminosae. Geraniales :—Geraniaceae, Euphorbiaceae, Rutaceae. Opuntiales :—Cactaceae. Sapindales :—Anacardiaceae. Malvales :—Malvaceae, Sterculiaceae. Parietales :—Passifloraceae, Begoniaceae, Hypericaceae, Clusiaceae, Theaceae. Myrtiflorae :—Myrtaceae, Combretaceae. Umbelliflorae :—Umbelliferae. Ericales :—Ericaceae. Contortae :—Apocynaceae, Asclepiadaceae. Ebenales :—Sapotaceae, Ebenaceae. Tubiflorae :—Solanaceae, Labiatae, Verbenaceae, Convolvulaceae. Rubiales :—Rubiaceae. Campanulatae :—Compositae. Cucurbitales :—Cucurbitaceae.

SINGAPORE

The special syllabus approved for Ceylon (p. xxxix) with the following amendments to the list of Angiosperms :—

In the first group of families :—

Delete : Aponogetonaceae, Juncaceae.

Add : Zingiberaceae, Dioscoreaceae.

In the second group of families :—

Delete : Crassulaceae.

Add : Dipterocarpaceae, Meliaceae.

Section 6 of the syllabus shall have special reference to vegetation in Malaya.

ZOOLOGY

CEYLON

Identical with that prescribed for examinations in England, except that the following local types are substituted :—

Mollusca : *Ampullaria* for *Buccinum*

Achatina for *Helix*.

Reptilia : *Calotes* for *Lacerta*.

GEOGRAPHY

Candidates are required to bring to the practical examination, for transmission to London for inspection by the examiners, note-books and any other evidence that they may desire to submit of practical work in the field.

(2) B.Sc. SPECIAL

GEOGRAPHY

Candidates are required to bring to the practical examination, for transmission to London for inspection by the examiners, note-books and any other evidence that they may desire to submit of practical work carried out in the field.

ZOOLOGY

CEYLON

Identical with that prescribed for examinations in England, except that the following local types are substituted :—

Mollusca : *Ampullaria* for *Buccinum*.
Achatina for *Helix*.
 Reptilia : *Calotes* for *Lacerta*.

DIPLOMA EXAMINATIONS

THEOLOGY

ENTRY

Each entry must state the date when the candidate was registered as an External Student together with the subjects in which he elects to be examined including the optional subject. Candidates who have already passed in certain of the subjects must state the date of the examination at which they passed.

EXAMINATION FEES

Each candidate entering for the whole examination at an Overseas Centre is required to pay a fee of £6 6s. ; for entry to each half of the examination (i.e., for three subjects), £3 13s. 6d. ; for re-examination in a referred subject or for examination in a supplementary subject, £2 12s. 6d.

GEOGRAPHY

DISSERTATION

Each candidate must submit to the University, for approval, the title of his dissertation, together with a brief description. These should reach the University, through the appropriate overseas authorities, not later than 1 October preceding the examination to which admission is desired.

ENTRY

Each entry must state the date when the candidate was registered as an External Student and the title of the dissertation with the date of its approval.

EXAMINATION FEES

Each candidate entering at an Overseas Centre is required to pay a fee of £6 6s. ; for re-entry to one part, £3 13s. 6d.

EDUCATION

ENTRY

Each entry must state the date when the candidate was registered as an External Student together with the optional subjects in which he elects to be examined.

EXAMINATION FEES

Each candidate entering for the whole examination at an Overseas Centre is required to pay a fee of £8 8s. and for examination in a supplementary subject, £2 12s. 6d.

PUBLIC ADMINISTRATION

ENTRY

Each entry must state the subjects in which the candidate elects to be examined, including the optional subjects selected. Candidates who have previously entered for either Part of the examination must state the date of the examination and the result.

EXAMINATION FEES

Each candidate entering for the whole examination at an Overseas Centre is required to pay a fee of £8 8s. ; for entry to each part of the examination £4 4s. ; for re-examination in a referred subject or for examination in an additional optional subject, £2 12s. 6d. An additional fee of £1 1s. is payable for a written paper in lieu of the oral examination prescribed in the Regulations. This additional fee will be returned to the candidate if the examiners report, after considering a candidate's papers, that no additional paper is required.

HIGHER DEGREE EXAMINATIONS

REGULATIONS FOR THE REGISTRATION OF EXTERNAL STUDENTS FOR HIGHER DEGREES

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry to the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee, provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and withdraws, fails, or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required to cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted. A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed, obtain the necessary entry papers, and return them to the University with the examination fee through the Overseas Authority if entering at an Overseas Centre.

FEES							£	s.
Registration Fee	..	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	..	2	2

MASTERS' DEGREES

EXAMINATION FEES

Each candidate entering for a Master's Degree examination overseas must pay a fee of £16 16s., together with an additional fee of £1 1s. where an oral examination is prescribed in the ordinary regulations. This additional fee will be returned to the candidate if the examiners report, after considering a candidate's written papers, that no additional paper is required in lieu of, or in addition to, the oral test.

M.Th.

An oral test will not be required, but the examiners may, after considering a candidate's written work, set a further written paper or papers.

M.A.

No M.A. Examination involving a thesis or a practical test can be held at an Overseas Centre. In any case, each candidate must ascertain, through the overseas authorities, whether the University will sanction the holding of the examination he proposes to take.

Oral Tests. In Classics, Geography, History and Philosophy an oral test will not be required, but the examiners may, after considering a candidate's written work, set a further written paper or papers to replace it.

In Mediaeval and Modern Languages other than English, there shall be an oral test ; and the examination will be sanctioned at any Centre only if arrangements satisfactory to the University can be made for the conduct of the oral test. In addition, the examiners may, after considering a candidate's written work, set a further written paper or papers.

Candidates taking the written part of the M.A. Degree Examination in English (without thesis) at an Overseas centre, will be required to present themselves in London for an oral examination not more than five years after satisfying the examiners in the written part of the examination.

In Mathematics (by written papers) and in Oriental Languages there is no oral test.

LL.M.

An oral test will not be required, but the examiners may, after considering a candidate's written work, set a further written paper or papers.

M.Sc.

No M.Sc. Examination involving a thesis or practical test may be taken at an Overseas Centre. In Geography and in History and Philosophy of Science an oral test will not be required, but the examiners may, after considering a candidate's written work, set a further written paper or papers.

In Mathematics (by written papers) there is no oral test.

M.Sc. (ECON.)

No subject involving a thesis may be offered at an Overseas Centre. An oral test will not be required from candidates proceeding by written papers only or by written papers and a dissertation, but the examiners may, after considering the candidate's written work, set a further written paper or papers.

DOCTORS' DEGREES

The University confers a Ph.D. Degree in the Faculties of Theology, Arts, Laws, Music, Medicine (in non-clinical subjects), Science, Engineering (including Mining and Metallurgy), and Economics (including Commerce). An oral examination (which can be held only in England) is an essential part of the examination. All theses or dissertations must be written in English.

In addition the University awards Higher Doctorates (D.Lit., D.Sc., etc.) normally on published work, and in all cases the examiners have power to call candidates for an oral examination.

Candidates resident overseas, therefore, must be prepared to come to England should the examiners require, and would do well to arrange to submit their entry for the Doctorate in good time before they leave for England, and to notify the External Registrar of the approximate date of arrival and departure so that the oral examination may be arranged to take place during their proposed stay in this country.

UNIVERSITY OF LONDON



REGULATIONS

FOR DEGREES IN

THEOLOGY

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Candidates for the Degree of Bachelor of Divinity as External Students are required to satisfy the minimum University and Faculty entrance requirements, to have been registered as External Students preparing for the degree of B.D. and to pass the Intermediate and Final Examinations.

The standard of the Final examination is that which would normally be required of a whole-time student after a course extending over three academic years after completing the minimum University and Faculty entrance requirements.

INTERMEDIATE EXAMINATION IN DIVINITY

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination, each candidate must (a) have satisfied minimum University and Faculty entrance requirements and (b) have been registered as an External Student preparing for the Degree of B.D.

Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced a course of study. Students for the June examination should normally apply for registration in the period October to December of the year preceding the examination, and not later than 25 February.

Students who apply to take the Final Examination less than three academic years from the date of registration are warned that an application for late registration, with a late fee of £2 2s., will be necessary when they apply for approval of candidature for the Final Examination.

FACULTY REQUIREMENTS

Candidates who have satisfied minimum University entrance requirements are deemed to have satisfied Faculty requirements for the B.D. degree.

DATE OF EXAMINATION

The examination will take place once in each year, and will commence on the afternoon of the fourth Monday in June.

ENTRY TO EXAMINATION

The candidate list will be opened on 11 February. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 18 March and the candidate list will be closed on 25 March. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—	£	s.
Whole examination	6	6
Referred subject	2	2
Each supplementary subject	2	2

Exemption in virtue of another examination :—

Complete exemption	No	fee
Partial exemption, per subject taken	2	2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

1. The examination will be a Pass Examination only. Candidates will be examined in the following five subjects :—

I New Testament Greek (two papers).
and **four** of the following (one paper each) :—

- II Elementary Hebrew.**
- III Ancient History.**
- IV Classical Greek.**
- V Latin.**
- VI General Ethics.**
- VII Ethics (Set Book).**
- VIII General Psychology.**
- IX Psychology of Religion.**

2. Candidates who wish to obtain Honours at the B.D. Examination must *either* have passed in Elementary Hebrew as a subject or as a supplementary subject of the Intermediate Examination in Divinity, *or* have obtained exemption therefrom, *or* must offer at the B.D. Examination Sections (i)(c) and (ii)(c) in the papers on Old Testament.

3. The examination will be conducted by means of printed papers ; but the examiners shall not be precluded from putting oral questions to any candidate.

4. Candidates will not be approved by the examiners unless they have shown (on one and the same occasion, except as provided under "Reference" and "Exemptions" below) a competent knowledge in each of the subjects taken.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

6. A candidate who has passed the Intermediate Examination in Divinity will not be permitted to re-enter, except as provided under the Regulations for supplementary subjects.

REFERENCE

1. A candidate who enters for the whole examination, but who fails to reach the required standard in one subject only, may be referred, i.e., he may be permitted to re-present himself for examination in that subject alone or in another subject allowed by the regulations at one or more subsequent Intermediate Examinations in Divinity.

2. The examiners will recommend that a candidate be referred only if his failure in one subject is not serious and if his performance in the remaining subjects is reasonably good.

3. A candidate who has completed the Intermediate Examination after having been referred in one subject will be deemed for all purposes to have passed the examination in question on the date of completion.

SUPPLEMENTARY SUBJECTS

Candidates who have passed or been exempted from the Intermediate Examination in Divinity may enter for examination in one or more supplementary subjects.

EXEMPTIONS

1. *In virtue of Higher School Certificates and the General Certificate of Education :—*

(a) A candidate who (i) holds a Certificate or Certificates awarded on a Higher School Examination recognized by the Ministry of Education as an approved second examination in Secondary Schools and (ii) is qualified to proceed to the External Intermediate Examination in Divinity, may apply for exemption at that examination in respect of any subject or subjects of that examination corresponding to those endorsed on his Higher School Certificate or Certificates on the Main (Principal) or Additional Subject standard, provided that the subject(s) correspond with those which may be offered at the Intermediate Examination in Divinity.

In addition, a candidate who holds a certificate may apply for exemption from three Alternative Subjects at the Intermediate Examination in Divinity in virtue of a pass at Main (Principal) Subject standard in two corresponding subjects, and a pass at Subsidiary Subject standard in the third corresponding subject of the Intermediate Examination in Divinity.

Candidates who have not qualified for the award of a Higher School Certificate, but who have been permitted to count successes gained in 1949 and 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirement, may apply for exemption in corresponding subjects of the Intermediate Examination in respect of these two subjects.

(b) A candidate who (i) holds a General Certificate or Certificates of Education awarded by one of the approved University Examining Bodies, and (ii) is qualified to proceed to the External Intermediate Examination in Divinity, may apply for exemption at that examination in any subject or subjects passed at the Advanced Level, provided that the subject(s) correspond to those which may be offered at the Intermediate Examination in Divinity.

(c) From 1 September 1952 all fees payable in respect of complete or partial exemption are abolished. Candidates who are required to take part of the examination to complete a partial exemption will be required to pay entry fees for the subject or subjects which they are required to take, but no additional fee for exemption from the remaining part of the examination.

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

(d) A candidate who is required to pass in two or more subjects in order to complete his Intermediate qualification must satisfy the examiners in all such subjects at one and the same examination, and if he is only partially successful he shall be required on re-entry to offer all such completing subjects again.

(e) A candidate may, if he so desires, complete his exemption qualification by passing in the required additional subjects at a subsequent Higher School Examination, or General Certificate of Education (Advanced Level) Examination, provided the subjects offered conform to the regulations. In this case all the subjects required must be passed at one and the same Higher School Examination or General Certificate of Education (Advanced Level) Examination.

(f) No certificate will be issued to candidates in respect of exemption, but a notification will be sent to duly qualified candidates at their request when the exemption has been completed, stating that they are qualified to proceed to the External B.D. Examination.

2. Candidates who have passed Intermediate Arts of this University with any of the following subjects :—Latin, Greek, Hebrew, Ancient History, Ethics are exempt from the corresponding papers at Intermediate Divinity.

3. Graduates in Arts of this University are exempt from Intermediate Divinity. Such candidates will not, however, be eligible for the award of Honours at B.D. unless they have *either*

- (a) passed in Elementary Hebrew as a supplementary subject of Intermediate Divinity.
- or (b) passed in sections (i) (c) and (ii) (c) (Hebrew Texts) in the papers on Old Testament at B.D.,
- or (c) passed in Hebrew at Intermediate Arts or B.A. General, or in Hebrew at B.A. Honours,
- or (d) obtained exemption from Hebrew under the regulations for Advanced Students, or in virtue of the Diploma in Theology of this University.

4. Candidates who have obtained the External or Academic or Extension Diploma in Theology of this University with Hebrew as the optional subject are exempt from the paper on Elementary Hebrew at Intermediate Divinity.

TIME TABLE

The examination will be conducted in the order shown on the timetable which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. At two o'clock on 3 August the External Registrar will publish a list of the successful candidates.
2. A copy of this Pass List will be sent to each successful candidate, and an individual notification will be sent to each unsuccessful candidate.
3. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.
4. Certificates of having passed the examination will not be issued except to qualified students who apply for them.

5. Each successful candidate will receive a Detailed Report on his results in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass.

6. Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—

D—Failure ; E—Bad Failure.

7. Detailed Result Reports will be sent to successful candidates from one to two months after the publication of the ordinary Pass List, but will be sent to unsuccessful candidates at the time when they are notified of the result of the examination.

8. Educational institutions in receipt of annual grants from public funds may apply for a statement of the detailed results of their candidates ; such applications must be accompanied by a list of the candidates' names, the name of the examination and the date at which it was taken. The results cannot be communicated until about two months after the publication of the Pass List and each institution will have communicated to it the results of those candidates only who are registered as pursuing a course of study at that institution.

SYLLABUSES

(A list of the set books will be found in the Appendix to these regulations.)

I New Testament Greek

[Two papers.]

(a) Grammar, syntax and composition of simple sentences.

(b) A set portion of the Greek Testament with translation; grammar, subject-matter, simple re-translation.

(The text and apparatus used by the examiners and recommended for the use of candidates will be that contained in the *Novum Testamentum Graece, Editio Altera*, ed. Alexander Souter, Clarendon Press, Oxford, 1947.)

II Elementary Hebrew

[One paper.] Accidence. Easy translation from short set portion of the Old Testament, and re-translation. Easy composition, vocabulary to be given so far as not taken from the set portion. Pointing passages from the set portion.

(The use of Square Character with full pointing in writing Hebrew is compulsory.)

III Ancient History

[One paper.] Roman History from Sulla to Marcus Aurelius.

IV Classical Greek

[One paper.] Set book (prose). Translation of easy sentences into Greek. Translation into English of easy passages not prescribed. Questions on grammar.

V Latin

[One paper.] Set book (prose or verse). Translation of English sentences into Latin. Translation into English of easy passages not prescribed. Questions on grammar.

VI General Ethics

[One paper.] Scope of Ethics. Moral concepts and judgments. General nature of desire and will. Conduct and character. Customary morality. Reflective morality. Theories of moral sense and of moral intuition. Conscience, conception of a moral end. Pleasure, happiness, moral excellence, etc. Relation of the individual to society. Duties and rights. Moral institutions. The ethical virtues. Human freedom and responsibility.

VII Ethics (Set Book)

[One paper.] Plato : *Republic*.

As much knowledge of the general problems will be expected as is necessary for the intelligent study of the prescribed work.

VIII General Psychology

[One paper.] Scope and methods of Psychology. The leading schools of Psychology. The body-mind relationship. The principles of mental development. Consciousness, sub-consciousness, the unconscious. Sensation and perception. Attention, association, assimilation, volition, emotion and sentiment, imitation and suggestion, imagination, memory, habit, belief, conception and reasoning. The innate constitution of Man. Dreams, hallucinations and illusions. Rationalization, sublimation and projection. The elements of psycho-pathology. Hypnotic phenomena. Self and not-self. Personality.

IX The Psychology of Religion

[One paper.] The development of religious psychology. The religious consciousness. Religion as individual and social. Cult, rites and worship. The psychology of religious belief. The religion of childhood and adolescence. Conversions and methods of obtaining conversion. Sin and repentance. Prayers. Religious knowledge and the place of intuition and inference therein. Saintliness. Mysticism. Asceticism. Religious symbolism. Belief and faith. The place and limitations of psychology in the study of religion.

B.D. EXAMINATION

The examination is common to Honours and Pass candidates. Successful candidates will be awarded First or Second Class Honours or a Pass Degree. Candidates who have obtained the Degree of B.D., whether Pass or Honours, are not permitted to re-enter with a view to improving their class.

Candidates who wish to obtain Honours must *either* have passed in Elementary Hebrew as a subject or as a supplementary subject of Intermediate Divinity, *or* have obtained exemption therefrom, *or* must offer sections (i) (c) and (ii) (c) in the papers on Old Testament.

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination, each candidate must (a) have been registered as an External Student preparing for the Degree of B.D. not less than three academic years earlier, (b) have completed the Intermediate Examination in Divinity not less than one academic year earlier and (c) have obtained approval of candidature for the B.D. Examination as an External Student.

DATE OF EXAMINATION

The examination will take place once in each year, and will commence on the third Monday in June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the B.D. Examination during the period September-December in the year next but one preceding the examination and not later than 15 February in the year preceding the examination. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 15 February applications may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 20 February in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 6 February. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 13 March, and the candidate list will be closed on 20 March. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole examination	6	6
Each supplementary subject	2	2

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

1. Candidates will be examined in the following *six* subjects :—

- I Old Testament** (two papers).
- II New Testament** (two papers).
- III Biblical and Historical Theology** (two papers).
- IV Church History** (one paper).
- V Philosophical Introduction to Theology** (one paper).
- VI One** of the following alternative subjects (one paper) :—

- (a) Old Testament Hebrew Text.
- (b) English Church History.
- (c) Patristic or Scholastic Texts.
- (d) The Comparative Study of Religions.
- (e) Christian Ethics.
- (f) History of Christian Worship.

(Candidates must state, when applying for approval of candidature, which alternative subject they select.)

2. The examination will be conducted in the main by means of printed papers, but the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

3. Candidates will not be approved by the examiners unless they have shown a competent knowledge in each of the subjects taken.

4. All answers to examination questions shall be written in English unless instructions are given to the contrary.

SUPPLEMENTARY SUBJECTS

Candidates who have passed the B.D. Examination are admissible for examination in one or more supplementary subjects.

TIME TABLE

The examination will be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. At two o'clock on 11 August the External Registrar will publish a list of the successful candidates, arranged in alphabetical order in each of the three categories, First Class Honours, Second Class Honours and Pass.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the B.D. Examination who have completed more than half of the examination are eligible to apply for an Aegrotat Degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher degree on complying with the Regulations for such degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.D. under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES

(A list of the set books and special subjects will be found in the Appendix to these regulations.)

I Old Testament

[Two papers.]

(i) (a) The History of Israel to A.D. 70.

Either (b) A detailed study, including Introduction, of selected books in the Revised Version of the Old Testament or of the Apocrypha,

or (c) A detailed study of the Hebrew Text of a portion of one of the selected books of the Old Testament, including translation, pointing, and critical, grammatical and exegetical notes.

(ii) (a) The Religion of Israel to A.D. 70.

Either (b) A detailed study, including Introduction, of selected books in the Revised Version of the Old Testament or of the Apocrypha,

- or (c) A detailed study of the Hebrew Text of a portion of one of the selected books of the Old Testament, including translation, pointing, and critical, grammatical and exegetical notes.

(Candidates must state, when applying for approval of candidature, which options they select.)

A general knowledge of the contents of the Old Testament and Apocrypha will be required.

II New Testament

[Two papers.]

- (a) Translation, introduction, criticism and exegesis of specified books.
 (b) Textual criticism, general introduction, contents, formation of canon of the whole New Testament ; unprepared translation from the New Testament.

(The text and apparatus used by the examiners and recommended for the use of candidates will be the *Novum Testamentum Graece Editio Altera*, ed. Alexander Souter, Clarendon Press, Oxford, 1947.)

III Biblical and Historical Theology

[Two papers.]

One of the following subjects as prescribed in rotation :—

- (1) The Work of Christ.
- (2) Man, Sin and Grace.
- (3) The Incarnation and the Trinity.

(1) *The Work of Christ*

(a) Biblical, with special reference to the following :—

- (1) The Covenant relation in the Old Testament ; the moral and ceremonial conditions of fellowship with God ; the idea of holiness ; the sacrificial system in outline and meaning ; the Old Testament conceptions of salvation, redemption and life after death ; the soteriological and eschatological conceptions in Jewish and Greek thought in the time of Christ.
- (2) The New Testament teaching as to the work of Christ.

(b) Historical, with special reference to the following :—

- (1) Early Christian conceptions, Greek and Latin, of Salvation as wrought by Christ.
- (2) Soteriology of Anselm, Abailard and the Schools.
- (3) Reformation and Post-Reformation theories of atonement and redemption.
- (4) Modern Theories.

(Special attention should be given to the inter-relation of the doctrines of the Person and of the Work of Christ in the different periods.)

(2) *Man, Sin and Grace*

(a) Biblical, with special reference to the following :—

- (1) The psychological terms of the Old Testament ; the ideas of corporate personality, life and death ; the terminology of sin and grace in primitive, prophetic and legalistic ideas ; the development of the relevant ideas in Judaism to the time of Christ.
- (2) The New Testament experience of salvation, with its implications regarding man and sin and the work of the Holy Spirit.

(b) Historical, with special reference to the following :—

- (1) The Gnostic, Manichaean and Pelagian Controversies.
- (2) Mediaeval and Tridentine Doctrine.
- (3) Reformation Doctrine.
- (4) Jansenism and Arminianism.
- (5) The modern approach to these doctrines through philosophy and psychology.

(Special attention should be given to the relation of the doctrine of Grace to the Work of the Spirit.)

(3) *The Incarnation and the Trinity*

(a) Biblical, with special reference to the following :—

- (1) The doctrine of God and the conception of Spirit in the Old Testament.
- (2) The Old Testament antecedents to the New Testament doctrine of the Person of Christ ; the Jewish ideas in the time of Christ concerning mediation, the Messiah, the Son of Man and the Logos.
- (3) The teaching of the New Testament as to the Person of Christ.
- (4) The data for the doctrine of the Trinity contained in the New Testament.

(b) Historical, with special reference to the following :—

- (1) The doctrine of the Incarnation and the Trinity in relation to Greek thought and to the Arian and Macedonian Controversies.
- (2) The Christological controversies of the Conciliar Period.
- (3) The history of the doctrine of the Procession of the Holy Spirit.
- (4) The doctrine of the Incarnation and the Trinity in the Middle Ages and in the Reformation Period.
- (5) Modern theories.

IV Church History

[One paper.] The History of the Christian Church to A.D. 451.

V Philosophical Introduction to Theology

[One paper.]

(a) The problem of Knowledge :—

The purpose of philosophy. The nature of knowledge : intuitionism, idealism, empiricism, scepticism, agnosticism, pragmatism.

(b) The problem of Morality :—

The scope of ethics : its relation to psychology, sociology, metaphysics, and art. The relation of the individual to society. The nature of the Good : hedonism, utilitarianism, evolutionism, intuitionism, perfectionism. Personality and the freedom of the Will.

(c) The problem of Religion :—

Definition of religion and theories of its origin ; the relation of religion to science, morality, philosophy and art. Belief in God and proofs of the Divine Existence. Relation of natural theology to revelation.

(d) The problem of Reality :—

Dualism, materialism, monism, theism. Polytheism, pantheism deism. The monotheistic doctrine of God's Nature and Attributes. God's relation to the world. The religious conception of Man : immortality.

VI Alternative Subjects

One subject to be selected from the following list :—

(Candidates must state, when applying for approval of candidature, which subject they select.)

(a) Old Testament Hebrew Text.

Translation, exegesis, re-translation, pointing and grammar of specified portions of the Old Testament.

(b) English Church History.

A prescribed period of English Church History.

(c) Patristic or Scholastic Texts.

Prescribed patristic or scholastic texts, illustrative of the prescribed branch of Biblical and Historical Theology.

(d) The Comparative Study of Religions.

A historical and comparative study of the main principles of Brahmanism (with Hinduism), Buddhism, Zoroastrianism, Judaism (since the Fall of Jerusalem, A.D. 70), Islam, Confucianism (with Taoism), Shinto.

(e) Christian Ethics.

(i) The ethical teaching of the New Testament with its historical and theological background particularly in the Old Testament and with special reference to the ethical teaching of St. Paul.

(ii) The ethical teaching and practice of the Early Church with regard to the State, the Family, Property, Slavery, War and Punishment. The Christian and pagan ethic compared. The moral discipline of the mediaeval Church and the ascetic ideal. The influence of the Reformation on the Christian ethic with special reference to the ethical teaching of Luther and Calvin.

(iii) The application of the fundamental principles of the Christian ethic to personal conduct and social morality in contemporary society with special reference to the Christian doctrine of man, the conception of the natural law and of divine grace, the place of the individual in society in relation to the laws of God and the rights of man, the significance of marriage and the family, and of industrial and political relationships.

Suggested Bibliography

L. E. Dewar and C. E. Hudson : *Christian Morals* (London University Press), and S. Cave : *The Christian Way* (Nisbet) deal from different standpoints with much of the syllabus and should be consulted.

A. E. Oxborn : *Christian Ethics* (O.U.P.) is a comprehensive textbook covering briefly much of the syllabus.

The following books deal with New Testament Ethics : F. B. Clogg : *The Christian Character in the Early Church* (Epworth Press). L. E. Dewar : *An Outline of New Testament Ethics* (London University Press). C. A. Scott : *New Testament Ethics* (C.U.P.).

A useful source-book is C. E. Hudson and M. Reckitt : *The Church and the World* (3 vols., Allen and Unwin).

(f) History of Christian Worship.

The nature and functions of worship. The differentia of Christian worship ; the influence of racial and national characteristics in determining the forms of worship.

The history of worship in Eastern and Western Christendom down to the 16th century ; the growth of the liturgical books.

The work of the Reformation, and of the Counter-Reformation, in the field of worship and liturgy.

The subsequent history of the Book of Common Prayer down to the latest revision ; the general tendencies of modern worship.

MASTER OF THEOLOGY EXAMINATION REGULATIONS FOR THE REGISTRATION OF EXTERNAL STUDENTS FOR HIGHER DEGREES

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma or postgraduate certificate will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry to the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee, provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and withdraws, fails, or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required to cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted. A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed in the Regulations, obtain the necessary entry papers, and return them to the University with the examination fee.

FEES						£	s.
Registration Fee	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	2	2

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have obtained the degree of Bachelor of this University not less than two academic years previously (in exceptional circumstances this interval may be reduced), (b) have obtained First or Second Class Honours at the B.D. Examination, or, alternatively, have passed a qualifying examination consisting of the whole of the B.D. Examination and have reached at least Second Class Honours standard therein (candidates who passed the B.D. Pass Examination in or before 1937, will be permitted to register for the M.Th. Examination without further qualification), and (c) have been registered as an External Student preparing for the M.Th. Examination at least twelve months before the last date of entry.

DATE OF EXAMINATION

The examination will take place once in each year, and will commence on the morning of the day following the fourth Monday in June.

REGISTRATION

Candidates should normally register during the period September-January of the year next but one preceding the examination. Applications for registration received after 1 February will only be considered under the regulations governing Late Registration. The last date for Late Registration is 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 18 December. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 January and the candidate list will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Every candidate must pay a fee of £15 15s.
2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."
3. A candidate who withdraws from the examination after the last date of entry but not later than 15 April may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. x).

SCHEME OF EXAMINATION

1. Candidates will be examined in not more than *three* of the following five subjects, of which not more than one subject shall be taken in any one year :—

- I Hebrew and Aramaic (including Syriac).**
- II Greek New Testament and Apocrypha.**
- III Church History.**
- IV Biblical and Historical Theology.**
- V The Study of Religion.**

The degree will be awarded as a result of success in any **one** subject.

2. The examination will be conducted in the main by means of printed papers, but the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

3. All answers to examination questions shall be written in English unless instructions are given to the contrary.

TIME TABLE

The examination will be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. At two o'clock on 11 August the External Registrar will publish a list of the candidates who have passed the M.Th. Examination, arranged by the examiners under their respective branches, and in alphabetical order in each branch.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A Diploma for the Degree of M.Th. under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES

(A list of the set books and special subjects will be found in the Appendix to these regulations.)

I Hebrew and Aramaic (including Syriac)

(a) Biblical Hebrew (three papers).

(i) and (ii) Translation of pointed and unpointed passages from set books, with questions on grammar, text, etc.

(iii) Composition ; translation of unseen passages, pointed and unpointed ; grammar, philology, epigraphy, with special reference to Driver : *Notes on the Hebrew Text of the books of Samuel* (2nd edition, 1913), pp. 1-33, 84-94.

(The use of Square Character with full pointing in writing Hebrew is compulsory.)

(b) Post-Biblical Hebrew (one paper).

Mishna, *Pirke Aboth*. Rashi on *Genesis* I-XI. Translation of unprepared passages.

(c) Aramaic and Syriac (two papers).

(i) Pointed and unpointed passages of the Aramaic portions of the Old Testament ; The Targum of Isaiah I–XVI (ed. J. F. Stenning, Clarendon Press, 1949). *Luke* I–XII in the Old Syriac and Peshitta Versions ; *Odes of Solomon* 3–42 (ed. Rendel Harris and A. Mingana, Manchester University Press).

(ii) Composition and translation of unprepared passages.

(Acquaintance with the Estrangelo, Jacobite and Nestorian scripts and punctuation is expected, also superlinear punctuation in Aramaic.)

(d) Old Testament Introduction (one paper).

(i) Introduction (date, authorship, composition, etc.) to all the books of the Old Testament (Hebrew and Aramaic).

(ii) Special questions on the introduction to the books set in (a) (i) and (ii) ; and also in (c) (i) (i.e., *Ezra* and *Daniel*).

(iii) Introduction to the chief Ancient Versions of the Old Testament, viz. Septuagint, Old Latin, Vulgate and Peshitta.

II Greek New Testament and Apocrypha

(a) Translation and exegesis of the Greek New Testament (two papers). (i) General Paper ; (ii) Prescribed Books.

(b) Introduction to the Apocrypha together with translation and exegesis of prescribed books (one paper).

(c) Grammar, vocabulary and diction of the Greek Testament. Re-translation of the New Testament into Greek. Composition in Hellenistic Greek (one paper).

(d) Introduction to the New Testament (one paper).

(e) Textual Criticism and History of the Canon of the New Testament (one paper).

(f) The Theology of the New Testament (one paper).

(The text and apparatus used by the examiners and recommended for the use of candidates will be the *Novum Testamentum Graece, Editio Altera*, ed. Alexander Souter, Clarendon Press, Oxford, 1947.)

III Church History

(a), (b), (c) Three general papers on Church History : (a) to A.D. 800 ; (b) A.D. 800–1500 ; (c) A.D. 1500–1900.

(d) A paper on a special subject or period before A.D. 1500, to be studied with prescribed authorities.

(e) A paper on a special subject or period between A.D. 1500 and the end of the nineteenth century, to be studied with prescribed authorities

(f) The authorities prescribed under (d) and (e) (one paper).

(g) An Essay.

IV Biblical and Historical Theology

(a) Old Testament Theology with Jewish Theology down to the commencement of the Christian Era (one paper).

(b) New Testament Theology (one general paper, and one paper on a prescribed subject, or on the Theology of a prescribed book).

(c) History of Doctrine to the Second Council of Nicaea, A.D. 787 (one paper). Two prescribed periods or subjects (two papers). Essay subjects (one paper).

V The Study of Religion

1. Historical and Comparative (one paper).

(i) The definition of Religion. Theories of the origin of Religion. Early forms of belief, rite and worship.

(ii) A comparison of religious conceptions in respect to God or gods, creation, cosmology, cosmogony, man, incarnation, sin, sacrifice, forgiveness, the state of the dead ; in Brahmanism and Hinduism, Zoroastrianism, Judaism (after A.D. 70), Buddhism, Chinese and Japanese religions, Islam.

2. Psychological (one paper).

The religious consciousness, its character, origin and development ; its place in the life of man. The relation of the individual to the community in respect of religion. Worship and Prayer, Faith, Sin and Guilt, Conversion, Mysticism.

3. Philosophical (one paper).

Religious doctrines as intellectual constructions, in relation to science and metaphysics. Religious doctrines as practical principles of individual life and social order, in relation to ethics, aesthetics and sociology. The idea of God. Theistic arguments. Freedom, Immortality. The problem of evil. Religion and morality.

4. A subject selected for comparative study.

5. A religion selected for historical study.

6. A school, writer or treatise selected for philosophical study.

7. Subjects for essays.

DOCTOR OF PHILOSOPHY

Regulations for the Degree of Ph.D. are contained in a separate pamphlet which may be obtained on application to the External Registrar.

DOCTOR OF DIVINITY

1. Every candidate for the D.D. Degree as an External Student must have obtained the B.D. Degree and have passed either the M.Th. Examination or the Examination in Theology (Advanced Subjects) of this University as an External Student.

2. The Degree is awarded for independent work, published or unpublished, that makes a distinct contribution to theological learning. Such work must represent the candidate's own independent investigation and, if published, must be in the candidate's own name ; the work submitted must not previously have been the basis for the award of a degree in this or any other University, but a candidate will not be precluded from incorporating in the work submitted for the D.D. Degree a smaller work on which a University degree has previously been awarded. In addition to the independent work presented the candidate is invited to submit as subsidiary matter in support of his candidature any printed contribution or contributions to the advancement of theological learning which he may have published conjointly.

3. Any duly qualified candidate may apply at any time to the External Registrar for an entry form, which must be returned, duly completed, with a fee of twenty guineas (£21) and accompanied by four copies of any printed or typewritten contribution or contributions to theological learning that he may desire to submit.

Candidates are warned that, in view of the Summer Vacation, the result of any entry submitted later than 1 May is liable to considerable delay. All candidates should give preliminary notice of their intention to enter three months before sending in their entry forms.

4. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

5. Every candidate must, upon the above-mentioned entry form, state in writing (1) the subject or subjects within the purview of the Faculty of Theology upon a knowledge of which he rests his qualification for the doctorate, (2) how far and in what respects his investigations appear to him to advance the study of Theology, (3) whether any of his contributions have been previously submitted in whole or in part for another degree in this or any other University ; and further he must forward to the University with his entry form a short abstract, comprising not more than 300 words, of each of the works submitted.

6. After the examiners have read the work or works submitted, the candidate may be required to present himself at such place and upon such day or days as may be notified to him by the External Registrar to be further tested. It shall be within the discretion of the examiners to reject the candidate without such further test, or in case the examiners shall, upon examination of the contribution or contributions to the advancement of theological learning submitted by the candidate, hold the same to be generally or specifically of such special excellence as to justify the exemption of the candidate from further test, he may be so exempted, provided that the report of the examiners shall set forth the fact and grounds of such exemption.

7. The examiners will not recommend the award of the Degree unless the independent work forms a distinct contribution to the advancement of theological learning, (a) by reason of independent research which has led to a valuable addition to existing knowledge of the subject or (b) by reason of a new and adequate critical survey of existing knowledge of that subject ; nor unless such work is satisfactory in regard to its literary presentation.

8. The examiners shall report to the Senate upon each candidature separately and each such report of examiners shall contain (a) a list of the works submitted in the candidate's own name for the purpose of the degree, (b) a list of any conjoint publications submitted in support of his candidature, (c) a statement that the works submitted by the candidate in his own name do or do not form a distinct contribution to the advancement of theological learning, (d) a concise statement of the grounds on which he is or is not recommended by the examiners for the degree, (e) a statement that the work is or is not satisfactory in regard to its literary presentation.

9. After the report of the examiners has been approved by the Senate the External Registrar will notify the candidates who have been recommended for the degree ; but the degree will not be conferred upon a candidate who did not submit published work until the work or works submitted has been published in full and four copies received by the Senate.

10. Any thesis approved by the University for this degree and subsequently published must bear the following inscription on the title-page "Thesis approved for the Degree of Doctor of Divinity in the University of London."

11. A diploma for the Degree of D.D. under the seal of the University shall be delivered to each successful candidate.

A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

APPENDIX

SPECIAL SUBJECTS AND SET BOOKS

In this Appendix are given lists of books and subjects set for the next two years and, provisionally, for the third year. Candidates should be careful to consult the appropriate list. Those making use of the provisional list should obtain the Regulations issued in September next to ascertain whether any alterations have been made.

University Library.—Most of the books listed below are in the University Library and can be borrowed under the regulations applying to the General Library. The copies available are not necessarily those of the editions (if any) which are set.

INTERMEDIATE EXAMINATION IN DIVINITY

- 1954 **New Testament Greek :—**
St. Luke I-XII.
Elementary Hebrew :—
2 Samuel XVI-XIX.
Classical Greek :—
Plato : Crito.
Latin :—
Virgil : Aeneid, Book VI.
- 1955 **New Testament Greek :—**
Acts I-XII.
Elementary Hebrew :—
I Kings XVII-XIX and XXI-XXII.
Classical Greek :—
Plato : Apology.
Latin :—
Cicero : In Catilinam, Books I-IV.
- 1956† **New Testament Greek :—**
Luke XIII-XXIV.
Elementary Hebrew :—
Ruth and Jonah.
Classical Greek :—
Plato : Euthyphro.
Latin :—
Cicero : Pro Archia and Somnium Scipionis.

B.D. EXAMINATION

- 1954 **Old Testament :—**
 (i) (b) *Ezra—Nehemiah ; Joshua.*
 (c) *2 Samuel I-VII.*
 (ii) (b) *Job ; Jeremiah.*
 (c) *Jeremiah I-III, VII, XXXI.*
New Testament :—
St. Matthew.
I Corinthians.
Biblical and Historical Theology :—
The Incarnation and the Trinity.

† Provisional only ; subject to confirmation in September, 1954.

*Alternative Subjects :—***(a) Old Testament Hebrew Text :—***Isaiah XL–XLVIII.**Haggai.**2 Samuel VIII–XXI, XXIV.***(b) English Church History :—**

Beginnings of Christianity in Britain to 1135.

(c) Patristic or Scholastic Texts :—*Athanasius : De Incarnatione.**St. Cyril : Epistles to Nestorius (ii and iii) and to John of Antioch.**The Tome of Leo.**The Chalcedonian Definition of the Faith.*(These texts, with the exception of *De Incarnatione*, may be studied in T. H. Bindley : *The Oecumenical Documents of the Faith* (Methuen).)**1955 Old Testament :—**(i) (b) *Joshua ; II Kings.*(c) *II Kings XVIII–XXIII.*(ii) (b) *Jeremiah ; Daniel.*(c) *Jeremiah I–III, VII, XXXI.***New Testament :—***I Corinthians.**St. John.***Biblical and Historical Theology :—**

The Work of Christ.

*Alternative Subjects :—***(a) Old Testament Hebrew Text :—***2 Samuel VIII–XXI, XXIV.**Psalms LXXIII–LXXXIX.***(b) English Church History :—**

History of Christianity in England, 1135–1509.

(c) Patristic or Scholastic Texts :—*The Apostolic Fathers* (ed. Lightfoot, one-volume edition, omitting *Shepherd of Hermas*).*Anselm : Cur Deus Homo ?***1956† Old Testament :—**(i) (b) *II Kings ; II Samuel.*(c) *II Kings XVIII–XXIII.*(ii) (b) *Daniel ; Isaiah I–XXXV.*(c) *Isaiah XXVIII–XXXII.***New Testament :—***St. John.**Romans.***Biblical and Historical Theology :—**

Man, Sin and Grace.

*Alternative Subjects :—***(a) Old Testament Hebrew Text :—***Psalms LXXIII–LXXXIX.**Deuteronomy I–XV.*

† Provisional only ; subject to confirmation in September, 1954.

(b) English Church History :—

History of Christianity in England, 1509–1603.

(c) Patristic or Scholastic Texts :—

Origen : *De Principiis*, lib. iii, cap. I.

Augustine : *De Natura et Gratia* and *De Peccato Originali*.

M.TH. EXAMINATION**1954 Hebrew and Aramaic :—**

Exodus I–XXIV.

Psalms, Books I and II.

The Song of Songs.

Ecclesiastes.

Lamentations.

Greek New Testament and Apocrypha :—

(a) *St. Luke*.

Philippians.

Galatians.

The Epistle of James.

(b) *I Maccabees* and *Tobit*.

Church History :—

(d) The Age of Constantine.

(e) Thomas Cranmer and the Reformation in England.

(f) (i) On subject (d) : Authorities :—

Eusebius : *Ecclesiastical History*, Books VIII–X
(Loeb Library, 2 vols., with translation by
Kirsopp Lake).

Eusebius : *Vita Constantini* (ed. Heikel, 1902,
Kirchenvatercommission der Preussischen
Akademie, Leipzig).

(ii) On subject (e) : Authority :—

Miscellaneous Writings and Letters of Thomas Cranmer
(Vol. II of *Works of Thomas Cranmer*, Parker Soc).

Biblical and Historical Theology :—

(b) Eschatology in the New Testament.

(c) The Theology of Origen and Calvin.

The Study of Religion :—

Paper 4 : Revelation and Inspiration.

Paper 5 : The Religion of Ancient Egypt.

Paper 6 : Spinoza.

1955 Hebrew and Aramaic :—

Leviticus XVII–XXVI.

Ezekiel I–XXXIX.

Isaiah XIII–XXVII.

Nehemiah.

Greek New Testament and Apocrypha :—

(a) *Acts*.

The Pastoral Epistles.

Hebrews.

(b) *Ecclesiasticus*.

Church History :—

- (d) The Age of Augustine.
- (e) Richard Hooker and the Elizabethan Settlement.
- (f) (i) On subject (d) : Authority :—
 St. Augustine : *Confessions* (ed. Gibb & Montgomery, 2nd edition, Cambridge University Press, 1927).
- (ii) On subject (e) : Authority :—
 Richard Hooker : *Ecclesiastical Polity* (ed. Keble, Church and Paget, 3 vols., Oxford, 1888).

Biblical and Historical Theology :—

- (b) The relation of the Pauline Theology to the Teaching of the Synoptic Gospels.
- (c) The Theology of Athanasius and Hooker.

The Study of Religion :—

- Paper 4 : Conception of Sin.
- Paper 5 : Hellenistic Religion (B.C. 300–A.D.100).
- Paper 6 : Philosophical Works of Hume.

1956† Hebrew and Aramaic :—

- Leviticus* XVII–XXVI.
- Ezekiel* I–XXXIX.
- Isaiah* XIII–XXVII.
- Nehemiah*.

Greek New Testament and Apocrypha :—

- (a) *St. Mark.*
 Ephesians.
 Colossians.
 I Peter.
- (b) *Wisdom.*
 Baruch.

Church History :—

- (d) The Conversion of England.
- (e) Richard Baxter and the Puritan Revolution.
- (f) (i) On subject (d) : Authority :—
 Bede : *Historia Ecclesiastica Gentis Anglorum* (ed. Plummer, Oxford, 1896).
- (ii) On subject (e) : Authorities :—
 Richard Baxter : *Autobiography*, Parts I–II (ed. Lloyd Thomas, 1925).
 Documents of English Church History, nos. XCV–CXVII (ed. Gee & Hardy, 1896).

Biblical and Historical Theology :—

- (b) The Epistle to the Hebrews in relation to other types of New Testament Theology.
- (c) The Theology of the Cappadocian Fathers and Aquinas.

The Study of Religion :—

- Paper 4 : Magic and Religion.
- Paper 5 : Teutonic Religion.
- Paper 6 : Religious Philosophy of Kant.

† Provisional only ; subject to confirmation in September, 1954.

UNIVERSITY OF LONDON



REGULATIONS FOR THE DIPLOMA IN THEOLOGY for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations, which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

EXTERNAL DIPLOMA IN THEOLOGY

QUALIFICATIONS FOR ADMISSION

To be admitted to the Examination, each candidate must (a) have satisfied the minimum University entrance requirements, (b) have been registered as an External Student preparing for the Diploma in Theology not later than 31 December in the year next but one preceding the examination, and (c) have obtained approval of candidature for the External Diploma, Parts I and II.

DATE OF EXAMINATION

The examination will take place once in each year, beginning on the third Monday in June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the Diploma in Theology Examination during the period September-October in the year preceding the examination and not later than 1 November in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 1 November applications may be accepted after that date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 20 February in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 6 February. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 13 March, and the candidate list will be closed on 20 March. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Each entry to whole examination	5	5
Entry to each part (three subjects)	3	3
Re-examination in one subject	2	2
Supplementary subjects, per subject	2	2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix).

SCHEME OF EXAMINATION

1. Candidates will be examined in the following subjects :—

- I. Old Testament** (2 papers).
- II. New Testament** (2 papers).
- III. Biblical Theology** (1 paper).
- IV. Philosophical Introduction to Theology** (1 paper).
- V. Church History** (1 paper).
- VI. One** of the following (1 paper in each subject) :—

- (i) Hebrew.
- (ii) Introduction to the Vulgate.
- (iii) Comparative Study of Religions.
- (iv) English Church History.
- (v) Christian Ethics.
- (vi) The History and Development of Christian Worship.

(Candidates must state, when applying for approval of candidature, which subject they select.)

2. Candidates may enter for the whole examination at once ; or may offer any three subjects and, if successful, the remaining three subjects on a subsequent occasion.

3. Candidates who enter for the whole examination and who satisfy the examiners in three, four or five subjects, will be deemed to have passed in the three subjects in which they have obtained the highest marks and will be permitted to offer the three other subjects at any subsequent examination.

4. Candidates will not be approved unless they have shown a competent knowledge in the foregoing subjects.

5. No exemption will be granted from any subject of this examination.

6. All answers to examination questions shall be written in English unless instructions are given to the contrary.

REFERENCE

A candidate who enters for the whole examination and passes in five out of the six subjects may, on the recommendation of the examiners, be allowed to offer the sixth subject alone at the next following examination on payment of the proper fee. A candidate who has passed in five subjects and who fails in his referred subject will be deemed to have passed the examination in the three subjects in which he obtained the highest marks.

SUPPLEMENTARY SUBJECTS

Candidates who have obtained the Diploma in Theology as either Internal or External Students may enter at the examination for External Students for the papers in one or more supplementary subjects.

TIME TABLE

The examination will be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. A provisional list of successful candidates arranged in alphabetical order will be published by the External Registrar on 23 July.

2. A copy of the Pass List will be sent to each successful candidate and an individual notification will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.
2. A certificate under the seal of the University shall be delivered to each successful candidate.

SYLLABUSES

(A list of the set books and special subjects will be found in the Appendix to these regulations.)

I Old Testament

(a) History of Israel (one paper). Outlines of the history from the Exodus to the death of Simon Maccabaeus.

(b) The Religion of Israel (one paper). The development of the religious ideas and institutions of Israel down to 100 B.C.

(Candidates will be expected to show in these papers a general knowledge of Old Testament Introduction.)

II New Testament

(a) General Introduction to all the books of the New Testament—authorship, date, place of origin, outline of contents.

(b) (i) Translation from a specified book or books of the New Testament together with Introduction and Exegesis.

Special emphasis will be laid upon the knowledge of the subject-matter of the set book or books. The text and apparatus used by the examiners and recommended for the use of candidates will be that contained in the *Novum Testamentum Graece, Editio Altera* (ed. Alexander Souter, Oxford, Clarendon Press, 1947).

(ii) Easy unprepared passages for translation from the Gospels.

III Biblical Theology

One of the following subjects as prescribed in rotation :—

1. *The Work of Christ*

The Biblical teaching on the subject, with special reference to :—

(1) The Covenant relation in the Old Testament ; the moral and ceremonial conditions of fellowship with God ; the idea of holiness ; the sacrificial system in outline and meaning ; the Old Testament conceptions of salvation, redemption and life after death ; the soteriological and eschatological conceptions in the time of Christ in Jewish and Greek thought.

(2) The New Testament teachings as to the work of Christ.

(Special attention should be given to the inter-relation of the doctrines of the Person and of the Work of Christ in the New Testament.)

2. *Man, Sin and Grace*

The Biblical teaching on the subject, with special reference to :—

(1) The psychological terms of the Old Testament ; the ideas of corporate personality, life and death ; the terminology of sin and grace in primitive, prophetic and legalistic ideas ; the development of the relevant ideas in Judaism to the time of Christ.

(2) The New Testament experience of salvation, with its implications regarding man and sin and the work of the Holy Spirit.

(Special attention should be given to the relation of the doctrine of Grace to the Work of the Spirit.)

3. *The Incarnation and the Trinity*

The Biblical teaching on the subject, with special reference to :—

(1) The doctrine of God and the conception of Spirit in the Old Testament.

(2) The Old Testament antecedents to the New Testament doctrine of the Person of Christ ; the Jewish ideas in the time of Christ concerning mediation, the Messiah, the Son of Man and the Logos.

(3) The teaching of the New Testament as to the Person of Christ.

(4) The data for the doctrine of the Trinity contained in the New Testament.

IV Philosophical Introduction to Theology

(i) (a) Definition of religion and theories of its origin. (b) Belief in God and proofs of the divine existence. (c) Polytheism, Pantheism, Deism, Monotheism. (d) The belief in Immortality. (e) Reason and Revelation.

(ii) (a) Non-theistic theories : Agnosticism, Dualism, Materialism, Monism. (b) Theism.

V Church History

History of the Christian Church to A.D. 451.

VI (i) Hebrew

(a) Set Book.

(b) Passages for translation from Hebrew into English with exegetical notes, pointing, grammar questions. Easy sentences for translation into Hebrew.

(The use of Square Character with full pointing in writing Hebrew is compulsory.)

VI (ii) Introduction to the Vulgate

Origin of the Vulgate ; its general relation to the original texts of the Old and New Testaments, to the Septuagint and to earlier Latin versions ; ecclesiastical recognition and use of the Vulgate ; value for textual criticism of the Old and New Testaments. The selected portion of the Vulgate shall be that corresponding to the Greek text set for the same year under II. New Testament (special introduction, translation and exegesis) ; passages for unseen translation will also be set.

VI (iii) Comparative Study of Religions

(a) A study of the main principles of **two** religions prescribed for study with special reference to the following points :—

(i) Sacred Literature : conceptions of inspiration and authority.

(ii) Conceptions of Deity ; the Divine-human relation ; origin and government of the world.

(iii) The religious life ; Sin, Salvation, Sacrifice, Prayer, Worship, Ethics ; and

either (b) A study of the main principles of **two other** religions prescribed for study, with special reference to the points mentioned above in (a) ;

or (c) Elementary forms of religion : their embodiment in rites, customs and beliefs.

VI (iv) English Church History

A prescribed period of English Church History.

VI (v) Christian Ethics

The Ethics of the New Testament :—(a) Relation to the moral teaching of the Old Testament. (b) Connection of the moral life with the facts of the Christian Gospel. (c) The moral life in relation to (1) the Christian Society, (2) the World, (3) the Individual.

The Ethics of Greece and Rome :—(a) As compared with the Ethics of the New Testament. (b) As influencing subsequent presentations of Christian Ethics.

Some types of Christian Ethics :—(a) Patristic : Clement of Alexandria, St. Augustine. (b) Mediæval : Aquinas, St. Thomas à Kempis. (c) Reformation : Luther, Calvin.

VI (vi) The History and Development of Christian Worship

To be studied in general outline with reference to the following :—

The origins and principles of Christian Worship ; Liturgies, Eastern and Western.

The Services of the Western Mediaeval Church : the Reformation changes in England and abroad. The Book of Common Prayer : (a) The Eucharist, (b) Morning and Evening Prayer, (c) the Ordinal, (d) the Kalendar and Occasional Offices.

APPENDIX

SPECIAL SUBJECTS AND SET BOOKS

In this Appendix are given lists of books and subjects set for the next two years and, provisionally, for the third year. Candidates should be careful to consult the appropriate list. Those making use of the provisional list should obtain the Regulations issued in September next to ascertain whether any alterations have been made.

University Library.—Most of the books listed below are in the University Library and can be borrowed under the regulations applying to the General Library. The copies available are not necessarily those of the editions (if any) which are set.

1954 New Testament :—

St. Matthew.

Biblical Theology :—

The Incarnation and the Trinity.

Hebrew :—

2 Samuel I-IX.

Comparative Study of Religions :—

(a) Zoroastrianism and Buddhism.

(b) Judaism (since the Fall of Jerusalem, A.D. 70), Confucianism and Taoism.

English Church History :—

The History of Christianity in England, 1600-1900.

1955 New Testament :—

St. John.

Biblical Theology :—

The Work of Christ.

Hebrew :—

2 Samuel I-IX.

Comparative Study of Religions :—

(a) Islam and Buddhism.

(b) Judaism (since the Fall of Jerusalem, A.D. 70), Brahmanism and Hinduism.

English Church History :—

The Beginnings of Christianity in England to 1100.

1956† New Testament :—

St. John.

Biblical Theology :—

Man, Sin and Grace.

Hebrew :—

2 Kings I-VII.

Comparative Study of Religions :—

(a) Islam, Confucianism, Taoism.

(b) Shinto, Brahmanism, and Hinduism.

English Church History :—

History of Christianity in England, 1100-1600.

† Provisional only ; subject to confirmation in September 1954.

UNIVERSITY OF LONDON



REGULATIONS FOR THE Intermediate Examination IN ARTS AND FOR DIRECT ENTRY TO FINAL EXAMINATIONS IN ARTS for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the year preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations, which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1
September, 1953

FACULTY REQUIREMENTS

1. For registration as a student in the Faculty of Arts, a candidate who has satisfied the minimum entrance requirements of the University by means of a General Certificate of Education in and after 1951 will be required to have passed in two languages other than English at Ordinary or Advanced Level ; one, at least, of the two languages must be a Classical language.

(*Note*).—Languages at Ordinary Level will not be accepted for this purpose unless the syllabus provides for compulsory translation from English into the language.)

2. A candidate who is a native of Asia or of Africa and is not of European or American parentage and whose mother tongue cannot be offered as a subject at the General Certificate of Education Examination (or other examination approved by the University for the purpose of matriculation) must fulfil the normal requirements for entry into the Faculty as given above,

or have obtained a pass at Ordinary or Advanced Level in Latin or Greek* and at Advanced Level in English at an approved General Certificate of Education Examination,

or (in the case of a candidate who has obtained Certificate(s) in School or other Examinations prior to 1951)

have obtained a pass at not less than minimum University entrance level in Latin or Greek* at the examination recognized by the University for the purpose of his matriculation and a pass in English at Main Standard at an approved Higher School Certificate Examination.

*The conditions under which a candidate may offer a Classical Oriental Language in place of Latin or Greek are given on page 208, para. 7.

DIRECT ENTRY TO B.A. HONOURS AND B.A. GENERAL EXAMINATIONS THROUGH THE GENERAL CERTIFICATE OF EDUCATION AND HIGHER SCHOOL CERTIFICATES

(1) Students who have satisfied the minimum University and Faculty entrance requirements and who fulfil the conditions given below may apply for registration as External Students and for permission to proceed to a first Degree in the Faculty of Arts in the University without having previously satisfied the Examiners at an Intermediate Examination.

(2) Applications for direct entry to B.A. Honours and B.A. General will be considered in respect of students who have :—

either (i) passed, on one and the same occasion, at a General Certificate of Education Examination conducted by one of the approved University Examining Bodies, in three Advanced Level subjects corresponding to those which may be offered at the Intermediate Examination in Arts. One at least of the subjects must be a language, which may be English ;

or (ii) obtained a Higher School Certificate recognized by the Ministry of Education and have, on one and the same occasion, passed at main standard in three subjects corresponding to those which may be offered at the Intermediate Examination in Arts. One at least of the subjects must be a language, which may be English.

(3) Students applying under (2) (i) and (2) (ii) above who have not passed in a classical language at Advanced Level at a General Certificate

of Education Examination or at main standard at a Higher School Certificate Examination will be required to pass a special examination in a classical language before being permitted to proceed to a Final Examination.

The examination will consist of one paper of three and one of two hours. The syllabuses will be as follows :—

Latin.—As for Latin at the Intermediate Examination, except that candidates will not be required to study the set prose book and that they may offer Outlines of Roman Literature as an additional alternative to Roman History.

Greek.—As for Greek (Classical) at Intermediate, except that candidates will be required to offer one only of the set books, either prose or verse, and that they may offer Outlines of Greek Literature as an additional alternative to Greek History.

(Candidates must state, when registering, which options they select.)

(4) A candidate who is a native of Asia or of Africa and is not of European or American parentage, and who has passed at Advanced Level in one of the following languages : Classical Arabic, Classical Chinese, Classical Hebrew, Classical Japanese, Pali, Classical Persian, Sanskrit, will not be required to pass the special examination in Latin or Greek, but a candidate whose mother tongue is Hebrew or Japanese or Persian may not claim exemption in virtue of Classical Hebrew or Classical Japanese or Classical Persian respectively.

A candidate taking the examination in this country who wishes to claim exemption under this regulation will be required to send to the University original documentary evidence clearly establishing his nationality, but a candidate taking the examination at an Overseas Centre should submit this evidence to the appropriate overseas authority at the time of registration.

Any candidate, however, who is proceeding to an Honours Degree in Oriental Languages (other than Hebrew) or in History (Branch III, IV or V) or to a B.A. General Degree with at least two Oriental languages, and who has passed at Advanced Level in one of the Classical Oriental Languages mentioned above, may be granted exemption from the special examination in Latin or Greek.

A candidate who is proceeding to the Honours Degree in Hebrew and who claims exemption from the Intermediate Examination in Arts through a General Certificate of Education will be required, except in special circumstances, to have passed at Advanced Level in Latin or Greek.

(5) For direct entry to B.A. Honours in Mathematics (Revised Regulations) each candidate must

(i)(a) hold a Higher School Certificate with clear passes at Principal (Main) standard in three subjects and a subsidiary subject taken on one and the same occasion in subjects corresponding to those which may be offered at the Intermediate Examination in Arts, provided that the Principal subjects shall include Pure Mathematics and Applied Mathematics as separate subjects and that two of the subjects shall be a Classical Language and another language (which may be English), either of which may be the subsidiary subject,

or (b) hold a Higher School Certificate with clear passes at Principal (Main) standard in three subjects taken on one and the same

occasion in subjects corresponding to those which may be offered at the Intermediate Examination in Arts, provided that the Principal subjects shall include Pure and Applied Mathematics combined in one subject and that the standard attained in this subject was "Very Good" together with a Classical Language and another language (which may be English),

or (c) hold two Higher School Certificates with clear passes at Principal (Main) standard in four subjects corresponding to those which may be offered at the Intermediate Examination in Arts, provided that (as above) the subjects include Pure Mathematics and Applied Mathematics as separate subjects, or Pure and Applied Mathematics combined in one subject (provided that in this case the standard attained was "Very Good"), a Classical Language and another language (which may be English),

or (ii) hold a General Certificate or Certificates of Education with passes at Advanced Level in three subjects taken on the same occasion, or in a total of four subjects taken on two separate occasions, provided that the Advanced Level subjects shall include Pure Mathematics and either Applied Mathematics or Physics and a language (which may be English). A candidate who holds a General Certificate of Education which does not include a pass at Advanced Level in a Classical language will be required to pass the special examination in Latin or Greek (see para. (3) above) not later than one year before he presents himself for the Final Examination.

(6) For direct entry to B.A. Honours in Architecture, reference should be made to the Regulations for Degrees in Architecture which are contained in a separate pamphlet.

(7) (a) A candidate proceeding to B.A. Honours in History of Art is required to have passed at the Advanced Level or equivalent in a modern language other than English, and should have passed at the Advanced Level or equivalent in a subject corresponding to History of Art at the Intermediate Examination in Arts.

(b) A candidate proceeding to B.A. Honours in English should have passed at the Advanced Level or equivalent in subjects corresponding to Mediaeval English History, 43-1485 and Modern English History, 1485-1914 at the Intermediate Examination in Arts.

(c) A candidate proceeding to B.A. Honours in History (Branch II—Mediaeval and Modern History) should have passed at the Advanced Level or equivalent in subjects corresponding to Outlines of Mediaeval European History, 395-1500 and Outlines of Modern European History, 1500-1914 at the Intermediate Examination in Arts.

(d) A candidate proceeding to B.A. Honours in Malay is required to have passed at the Advanced Level or equivalent in a subject corresponding to Dutch at the Intermediate Examination in Arts.

(e) A candidate proceeding to Regional Studies in Slavonic and East European subjects should have passed at the Advanced Level or equivalent in a relevant Slavonic or East European language and in *either* European History *or* Economics.

(f) A candidate proceeding to B.A. Honours in Turkish is required to have passed at the Advanced Level or equivalent in Classical Arabic and in a subject corresponding to Outlines of the History of the Near

and Middle East from A.D. 600 at the Intermediate Examination in Arts in Oriental History.

(8) Special applications for direct entry to a Final Examination in Arts will be considered on their merits from students who fulfil the following conditions :—

(a) Whose education has been interrupted :—

(i) by National Service

(ii) by sickness or other exceptional cause

(iii) by lack of accommodation in a School or Institution of the University or in a University College

and

(b) Who have obtained a Higher School Certificate prior to 1951 and have attained an approved standard, on one and the same occasion, in :—

(i) three principal (main) subjects and a subsidiary subject corresponding to those which may be offered at the Intermediate Examination in Arts, provided that these subjects include a classical language and another language. (The classical language may be taken as subsidiary.)

or (ii) two principal (main) subjects and two subsidiary subjects, corresponding to those which may be offered at the Intermediate Examination in Arts, provided that these subjects include a classical language and another language, one of which languages must be a main subject.

The approved standard required under (i) is not less than a clear pass in all subjects, whether at main or at subsidiary standard.

The approved standard required under (ii) is not less than a clear pass in each of the two subsidiary subjects and *either* " Good " (or the equivalent) in each of the two main subjects *or* " Distinction " (or the equivalent) in one of the main subjects and a clear pass in the other.

(9) A candidate who between 1 September 1949 and 1 September 1952 paid the fee of £6 6s. for Direct Entry will be entitled to credit this against the fee required for entry to a Final Examination taken between 1 September 1952 and 1 September 1956.

INTERMEDIATE EXAMINATION IN ARTS

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have satisfied minimum University and Faculty entrance requirements and (b) have been registered as an External Student preparing for the degree of B.A. (General or Honours).

Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced a course of study. Students for the July examination should normally apply for registration in the period October to December of the year preceding the examination, and not later than 10 February. Students for the November examination should normally apply for registration in the period January to March preceding the examination and not later than

17 September. Students who apply to take the Final Examination less than three academic years from the date of registration are warned that an application for late registration, with a late fee of £2. 2s., will be necessary when they apply for approval of candidature for the Final Examination.

DATE OF EXAMINATION

The examination shall take place twice in each year and shall commence on the first Monday after 28 June, and on the fourth Monday in November (in London only). The syllabuses and set books for the November examination are the same as those for the preceding July.

ENTRY TO EXAMINATION

For the examination held in July, the candidate list will be opened on 28 January. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 3 March, and the candidate list will be closed on 10 March. No entry can be accepted after the candidate list has been closed.

For the examination held in November, the candidate list will be opened on 5 September. Entry forms will not be despatched by post from the University after 10 October, and the candidate list will be closed on 17 October. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole examination	6	6
Referred subject under old regulations	2	2
Supplementary subject	2	2

Exemption in virtue of another Examination :—

Complete exemption	No fee
Partial exemption (per subject taken)	2 2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

SCHEME OF EXAMINATION

(I) and (II) **Two languages**, of which one must be either Latin or Greek (Classical) and the other may be English.

Afrikaans	Geology	Music
Albanian	German	Norwegian
Arabic (Classical)	Greek (Classical)	Pali
History of Architecture	Greek (Modern)	Persian (Classical)
Armenian (Classical)	Gujarati	Physics
Armenian (Modern)	Hebrew (Classical)	Polish
History of Art	Hindi	Portuguese
Bengali	History	Roumanian
Biology	History (Ancient)	Russian
Botany	History (Oriental)	Sanskrit
Bulgarian	Hungarian	Scottish Gaelic
Burmese	Irish	Serbo-Croat
Chemistry	Italian	Sinhalese
Chinese (Classical)	Japanese (Classical)	Slovak
Czech	Japanese (Modern)	Slovene
Danish	Latin	Spanish
Dutch	Logic	Swedish
Economics	Malay	Tamil
Egyptian (Ancient) (In 1954 only)	Marathi	Telugu (In 1954 only)
English	Mathematics (Pure)	Theology
Ethics	Mathematics (Applied)	Tibetan
Finnish	Mathematics (Pure and Applied)	Turkish
French	Military Studies	Urdu
Geography		Welsh
		Zoology

History of Architecture (Section 3)					..	candidates required to submit drawings.
Biology	..	..	..	..	..	two practical examinations
Botany	..	..	..	..	..	practical examination
Chemistry	..	..	..	..	..	practical examination
Geography	..	..	..	..	..	map-work examination
Geology	..	..	..	..	..	practical examination

Japanese (Modern)	.. ..	oral examination
Mathematics (Pure and Applied)	..	third paper of 3 hours
Military Studies	.. ..	practical examination in Map Reading
Modern European languages (except English)	.. ..	oral examination
Physics	.. ..	practical examination
Zoology	.. ..	practical examination

3. The examination will be conducted mainly by means of printed papers ; but the examiners shall not be precluded from putting oral questions to any candidate.

4. No candidate may offer both Afrikaans and Dutch, or both Czech and Slovak, or both Classical and Modern Armenian, or both Classical and Modern Greek, or both Classical and Modern Japanese, or both Serbo-Croat and Slovene at the same examination.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

6. A candidate who has passed the Intermediate Examination in Arts will not be permitted to re-enter, except as provided under the Regulations for Supplementary Subjects.

7. (a) A candidate who is a native of Asia or of Africa and is not of European or American parentage may apply to the External Registrar for permission to substitute for Latin or Greek (Classical) any one of the following languages : Classical Arabic, Classical Armenian, Classical Chinese, Classical Hebrew, Classical Japanese, Pali, Classical Persian, Sanskrit ; but a candidate whose mother tongue is Hebrew or Japanese or Persian may not take Classical Hebrew or Classical Japanese or Classical Persian, respectively. Application should be made when registering, and a candidate will be required to send to the University original documentary evidence clearly establishing his claim to take a substituted language. Candidates taking the examination at an Overseas Centre should submit this evidence when applying for registration as an External Student.

(b) Any candidate, however, who is proceeding either to an Honours Degree in Oriental Languages (other than Hebrew) or in History (Branch III, IV or V), or to B.A. General with at least two Oriental languages, may apply to the External Registrar for permission to offer a classical oriental language in lieu of Latin or Greek (Classical).

(c) A candidate who is proceeding to the Honours Degree in Hebrew will be required, except in special circumstances, to offer Latin or Greek (Classical).

8. (a) Candidates for B.A. Honours History of Art are required to obtain special permission to proceed to that examination, and such permission will not normally be granted unless they have obtained a pass at an approved level in History of Art at the Intermediate Examination in Arts or its equivalent. They are also required to take a modern language other than English.

(b) Candidates proceeding to B.A. Honours in English are recommended to take Papers (a) and (b) of History.

(c) Candidates proceeding to B.A. Honours in History (Branch II only) are recommended to take Papers (c) and (d) of History.

(d) Candidates proceeding to B.A. Honours in Malay are required to take Dutch.

(e) Candidates proceeding to Regional Studies in Slavonic and East European subjects are recommended to take a relevant Slavonic language and *either* European History *or* Economics.

(f) Candidates proceeding to B.A. Honours in Turkish are required to take Classical Arabic and Oriental History, section (a) (Outlines of the History of the Near and Middle East).

(g) Candidates proceeding to B.A. Honours in Mathematics (Revised Syllabus) are required to pass a Preliminary Examination at an approved standard in Pure Mathematics, Applied Mathematics, a Classical Language and another language or in any of the subjects in which they have not qualified.

(Until further notice the Preliminary Examination will be the Intermediate Examination in the relevant subject or subjects and the entry fee will be £2 2s. for each subject taken up to a maximum of £6 6s.)

9. No candidate offering an experimental science subject will be allowed to pass unless he satisfies the examiners in the practical part as well as the written part of the examination.

10. Candidates will not be approved by the examiners unless they have shown (on one and the same occasion, except as provided under "Exemptions" below) a competent knowledge in each of the three subjects selected.

REFERENCE

1. There shall be no reference at the Intermediate Examination in Arts.

2. Candidates who were referred at Intermediate Arts held before 1948 will be required to pass in a fourth subject in accordance with the regulations in force at the date of reference.

3. Candidates who failed in one or more subjects at an examination held before 1948 will be required on re-entry to take the whole Intermediate Arts Examination.

SUPPLEMENTARY SUBJECTS

Candidates who have passed or been exempted from Intermediate Arts may enter for examination in one or more supplementary subjects.

EXEMPTIONS

1. *In virtue of Higher School Certificates and the General Certificate of Education :—*

(a) A candidate who was awarded a Higher School Certificate or General Certificate of Education which does not comply with the requirements for direct entry to a Final Examination in Arts may apply for exemption in respect of any subject(s) endorsed on his Higher School Certificate at main standard or on his General Certificate of Education at Advanced Level corresponding to subjects which may be offered at the Intermediate Examination in Arts.

Candidates who have not qualified for the award of a Higher School Certificate, but who have been permitted to count successes gained in 1949 and 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirement, may apply for exemption in corresponding subjects of the Intermediate Examination in respect of these two subjects.

(b) Before such candidates can complete their exemption from the Intermediate Examination in Arts, they must have passed in a suitable combination of *four* subjects, including two languages of which one must be a classical language, at main subject standard in the Higher School Certificate, at Advanced Level in the General Certificate of Education, or at the Intermediate Examination in Arts.

(c) A candidate who intends to proceed to the B.A. Honours Examination in Mathematics (Revised Regulations) must have passed at main

standard at a Higher School Certificate Examination in Pure Mathematics and Applied Mathematics as separate subjects, but a candidate who has passed in Pure and Applied Mathematics combined in one subject shall be admitted if the standard attained was "Very Good"; or have passed at the Advanced Level at a General Certificate of Education Examination in Pure Mathematics and either Applied Mathematics or Physics; otherwise he must pass the Intermediate Examination in Arts in Pure Mathematics and Applied Mathematics.

(d) A candidate who intends to proceed to B.A. Honours in Architecture should consult the Regulations for Degrees in Architecture which are contained in a separate pamphlet.

(e) A candidate who intends to proceed to B.A. Honours in History of Art or B.A. Honours in English or B.A. Honours in History (Branch II—Mediaeval and Modern History) or B.A. Honours in Malay or B.A. Honours in Regional Studies in Slavonic and East European Subjects or B.A. Honours in Turkish should refer to the special requirements and recommendations of the University which are set out in paragraph (7) (a-f) above for Direct Entry or paragraph 8 (a-f) of the Scheme of Examination for the Intermediate Examination in Arts.

(f) A candidate who wishes to offer a classical language other than Latin or Greek is permitted to do so under the same regulations as set out in paragraph (4) above for Direct Entry.

(g) A candidate who is required to pass in two or more subjects in order to complete his Intermediate must satisfy the examiners in all such subjects at one and the same examination, and if he is only partially successful he shall be required on re-entry to offer all such completing subjects again.

(h) A candidate who is partially exempt from the Intermediate Examination and who enters for the examination in order to complete his qualification will be required to pay a fee of £2 2s. per subject for first or subsequent entry.

(i) No certificate will be issued to a candidate in respect of exemption, but a notification will be sent to a duly qualified candidate at his request when the exemption has been completed, stating that he is qualified to proceed to the B.A. Honours or General Examination.

2. *In virtue of other examinations of this University :—*

(a) Candidates who have passed the Internal Intermediate Examination in Arts of this University are exempt from the External Intermediate Examination in Arts.

(b) Candidates who have passed the Intermediate Examination in either Science, Pharmacy, Agriculture, Horticulture, Engineering, Mining and Metallurgy, or Music, and graduates of this University in any of the foregoing Faculties or subjects, are exempt from examination under section (III) of the Intermediate Examination in Arts in one of the subjects in which they have so passed.

(c) Candidates who have passed the Intermediate Examination in Science (Economics) or in Commerce are exempt only from Economics.

(d) Candidates who before 1930 passed the Intermediate Examination in Divinity with Latin and/or Classical Greek are exempt from the corresponding examination at the Intermediate Examination in Arts.

(e) Graduates in Theology of this University, who have passed in Latin or Classical Greek at the Intermediate Examination in Divinity or who have qualified for exemption from Latin or Classical Greek

at the Intermediate Examination in Arts under some other section of this Regulation, are exempt from the whole of the Intermediate Examination in Arts, but otherwise they must pass in a classical language.

(f) Graduates in Commerce of this University who passed in French as their compulsory foreign language or as their second foreign language in Group D are exempt from French.

(g) Candidates who have obtained an Extension Diploma in the Humanities in History, Literature, Economics or History of Art are exempt from History, English, Economics and History of Art (or History of Architecture, according to the section taken) respectively.

(h) Candidates who have obtained the External or the Academic Diploma in Geography are exempt from Geography.

(i) Candidates who have obtained the External, Academic or Extension Diploma in Theology are exempt from Theology.

(j) Candidates who have obtained the Academic Diploma in History of Art or the Diploma in Fine Art of the University are exempt from History of Art.

TIME TABLE

The examination will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. At two o'clock on 20 August, the External Registrar will publish a list of the successful candidates ; for the November examination the list will be published on 7 January.

2. A copy of this Pass List will be sent to each successful candidate, and an individual notification will be sent to each unsuccessful candidate.

3. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October for the July examination and in January for the November examination.

4. Certificates of having passed the examination will only be issued to qualified students applying for them.

5. Each successful candidate will receive a Detailed Report on his results in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass.

6. Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—

D—Failure ; E—Bad Failure.

7. Failure in a subject which includes a practical or oral examination indicates failure in the subject as a whole and no further information can be given regarding the candidate's performance in the various parts of the examination.

8. Detailed Result Reports will be sent to successful candidates from one to two months after the publication of the ordinary Pass List, but will be sent to unsuccessful candidates at the time when they are notified of the result of the examination.

9. Educational institutions in receipt of annual grants from public funds may apply for a statement of the detailed results of their candidates ; applications must be accompanied by a list of the candidates' names, the name of the examination and the date at which it was

taken. The results cannot be communicated until about two months after the publication of the Pass List, and each institution will have communicated to it the results of those candidates only who are registered as pursuing a course of study at that institution.

SYLLABUSES

(A list of all the set books will be found in the Appendix to these regulations.)

Afrikaans

[Two papers.]

Grammar. Translation. Composition:—(i) Translation from English, and (ii) some form of free composition.

The examination will include a test in writing from dictation and in correct reading ; there will also be an oral examination to test the candidate's knowledge of the spoken language.

(Books will not be prescribed.)

Albanian

[Two papers.]

Grammar. Translation. Composition:—(i) Translation from English, and (ii) some form of free composition.

The examination will include a test in writing from dictation and in correct reading ; there will also be an oral examination to test the candidate's knowledge of the spoken language.

(Books will not be prescribed.)

Arabic (Classical)

[Two papers.]

1. Translation from specified texts with questions on their language and subject-matter. Arab history, A.D. 600–750.

2. Translation from unspecified texts. Translation into Arabic. Grammar.

History of Architecture

Candidates must take section (1) and **either** section (2) **or** section (3).

(1) Greek and Roman Architecture. [One paper.]

(2) History of Greek and Roman art. [One paper.]

The characteristics of various periods and their course of development in Egypt, Assyria, Greece and Rome.

(In both papers candidates will be required to illustrate some of their answers by sketches, but a high standard of draughtsmanship is not expected).

(3) Drawings of Greek and Roman Orders. In addition to taking a drawing paper on one of the orders in Greek and Roman Architecture, candidates will be required to submit drawings in accordance with the following instructions :—

Two Imperial size sheets of drawings will be required giving examples—one on each sheet—of either the Doric, Ionic, or Corinthian

orders ; one must be Greek, the other Roman. Each sheet should bear a statement by the candidate's teacher, if any, that it is the work of the candidate himself ; candidates not in attendance at a teaching institution will be required to include a certification to this effect. Each sheet must contain at least two columns of one order with entablature complete drawn to scale, the columns being not less than ten inches high on the paper, together with details drawn to at least three times the scale of the columns. These drawings are to be sent to the University one week before the date of the examination and will be returned to the candidate on application to the External Registrar.

Armenian (Classical)

[Two papers.]

1. Translation from specified texts with questions on their language and subject-matter. Armenian history, 5th century A.D.
2. Translation from unspecified texts. Translation into Armenian.

Armenian (Modern)

[Two papers]

1. Translation from specified texts, with questions on their language and subject-matter.
2. Translation from unspecified texts. Translation into Armenian. Grammar.

History of Art

[Two papers]

1. French and English Architecture and Sculpture from c. 1000–c. 1350.
2. Italian painting, sculpture and architecture from Giotto to Michelangelo.

Bengali

[Two papers.]

1. Translation from specified texts, with questions on their language and subject-matter.
2. Translation from unspecified texts. Translation into Bengali. Grammar.

Biology

[Two papers and two practical examinations.]

The general structure, physiology and life-history of :—*Amœba*, *Paramecium*, *Hydra*, earthworm, cockroach, dogfish, frog, and rabbit ; *Chlamydomonas*, *Pleurococcus*, *Spirogyra*, *Fucus*, *Dryopteris* and of the flowering plant, as illustrating various grades in animal and plant organization. The salient distinctions between sedentary and motile organisms.

The nature of protoplasm. The structure and physiology of the cell ; cell-division ; gamete-formation and its relation to the mechanism of heredity. Cell-differentiation and tissue-formation, including an elementary knowledge of the histology and functions of :—epithelia, blood, connective, skeletal, muscular and nervous tissues of animals and of the epidermis, parenchyma, collenchyma, sclerenchyma, xylem, phloem, and the primary and secondary meristems (including cork formation) in plants. The structure and functions of the more important organs of a flowering plant and of the mammalian body.

Sexual and non-sexual reproduction ; parthenogenesis.

The embryology of the flowering plant. The elements of vertebrate embryology with special reference to (a) cleavage and origin of germ layers in *Amphioxus*, the frog, the fowl and the rabbit ; (b) the formation of the embryonic membranes in the fowl and the rabbit ; (c) the outlines of organogeny as illustrated by the study of the fowl as far as the end of the third day of incubation ; (d) the modes of nutrition during development.

An elementary knowledge of carbohydrates, fats and proteins and their recognition by simple chemical tests.

Nutrition in plants and animals. Photosynthesis. The commonly cultivated food plants and their nutritional significance. An elementary knowledge of the soil as it affects plant life, and the importance of nitrates, sulphates and phosphates to the plant.

Digestion, absorption and assimilation in animals. An elementary knowledge of vitamins. The nature of enzyme action and the transport and storage of food material in animals and plants.

Respiration and the energy changes involved. Excretion. The water relations of plants and animals. Growth. Stimulus and response in plant and animals. An elementary knowledge of the endocrine systems in animals.

The parasitic and saprophytic modes of life as exemplified by *Pythium*, *Mucor*, the yeast plant, the bacteria and *Cuscuta* ; *Monocystis*, the malarial parasite, the tape-worm and a nematode parasite of plants. (A knowledge of the structure and life-history of these organisms only so far as it is of importance in relation to the special mode of life.) Insects as pests (e.g., Cabbage white butterfly), as pollinators (e.g., Bee) and as vectors of disease (e.g., *Anopheles*, *Aphis*).

The principal facts of heredity, including a knowledge of simple Mendelian experiments, the evidence for evolution, and an outline of the principal theories of the mode in which it takes place.

Practical Work

The practical work will be based on the above syllabus and should include :—

Dissection or microscopical examination of the animal and plant types cited.

In addition to the general external and internal anatomical features of the earthworm, cockroach, dogfish, frog and rabbit, the candidate is expected to have made the following special dissections :—

Cockroach (a) Preparation of salivary glands and of mouth parts.

Dogfish (b) Heart, afferent and efferent branchial systems.
(c) Brain and cranial nerves.

Frog (d) Heart and principal vessels of the arterial and venous systems.

(e) Spinal and sympathetic nerves ; removal of brain and spinal cord.

(f) Urinogenital system.

Rabbit (g) Heart and principal vessels of arterial and venous systems. (The heart of a sheep should be examined.)

(h) Removal and gross anatomy of brain.

(i) Urinogenital system.

(j) The eye of an ox.

In the study of the mammalian skeleton the skull of the dog will be substituted for that of the rabbit.

Microscopical preparation and examination of suitable animal and plant tissues.

Simple experiments in plant physiology, and detection of food stores by simple chemical tests.

A study of the external changes during development of the frog from fertilization to the end of metamorphosis. The examination of whole mounts and representative sections illustrating the development of the frog to the beginning of germ-layer formation and of the chick during the first, second and third days. The external features of a fairly advanced mammalian embryo attached to the wall of the uterus by the umbilical cord (museum specimen).

Candidates are required to bring to the practical examination their *original* laboratory notebooks for inspection by the examiners. These notebooks must be taken away at the close of the examination.

These notebooks must contain a certificate by the teacher, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their notebooks a statement as to how they carried out their practical work.

Botany

[Two papers and a practical examination.]

Morphology :—

The structure and properties of the cell. The plant body : its structure, development and modifications. Nuclear and Cell division.

Special Morphology, Reproduction and Taxonomy :—

The general characters of the following groups :—

Bacteria.

Fungi, especially *Mucor*, *Penicillium*, *Saccharomyces*, any common gill-bearing fungus, and a plant pathogen.

Algae, especially *Chlamydomonas*, *Spirogyra*, *Vaucheria* and *Fucus*.

Bryophyta, especially *Pellia*, and *Funaria*, the latter with special reference to its life history, and without detailed treatment of the sporophyte.

Pteridophyta, especially *Dryopteris*, and the special features of *Selaginella*.

Gymnosperms, especially *Pinus*.

Angiosperms, a study of the morphology and biology of the flower, with some training in the use of a flora. Family characters not to be emphasized.

Elements of Physiology :—

The mineral nutrition and water relations of plants.

Outlines of metabolic changes in the plant, especially respiration and photosynthesis.

Growth.

Geotropism and phototropism.

An elementary knowledge of the soil in relation to the plant.

Elements of genetics and their cytological basis. Evolution.

Practical Examination

The practical work will include the dissection and examination of plants or parts of plants, and the reference to the systematic position of the plants or parts of plants comprised in the above syllabus. Simple experiments in practical physiology may be set.

Candidates are required to bring to the practical examination their *original* laboratory notebooks for inspection by the examiners. These notebooks must be taken away at the close of the examination.

These practical notebooks must contain a certificate by the teacher, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their notebooks a statement as to how they carried out their practical work.

Candidates may bring their own stains to the practical examination. Double staining is not desired.

Candidates will be permitted to provide for themselves hand microtomes if they desire.

Bulgarian

[Two papers.]

Grammar. Translation. Composition:—(i) Translation from English, and (ii) some form of free composition.

The examination will also include writing from dictation, reading, and simple conversation.

(Books will not be prescribed.)

Burmese

[Two papers]

1. Translation from specified texts, with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Burmese Grammar.

Chemistry

[Two papers and a practical examination.]

The following outline is not to be regarded as a rigid syllabus, but is given, in continuation of the Ordinary Level of the General Certificate of Education of the University of London syllabus, for the general guidance of candidates, to indicate the range of the written part (I) and the experimental part (II) of the examination.

The whole syllabus is to be treated in an elementary manner and as far as possible experimentally. More importance will be attached to a sound understanding of fundamental principles and standard experimental methods than to an acquaintance with advanced theoretical ideas.

I

The laws of chemical combination. History of the discovery of the composition of air and water. The atomic and molecular theories. Equivalent, atomic, and molecular weights and methods for determining them. Valency. Atomic structure in so far as it is necessary to explain simply (a) the different types of valency, and (b) the periodicity in the properties of the elements of atomic number 1 to 18.

The periodic classification of elements, as illustrated by the chemistry of : H, He, Ne, A, Li, Na, K, Cu, Ag, Be, Mg, Ca, Sr, Ba, Zn, Cd, Hg,

B, Al, C, Si, Sn, Pb, N, P, As, Sb, Bi, O, S, Cr, F, Cl, Br, I, Mn, Fe, Co, Ni. The treatment of the descriptive chemistry should be extended to include the preparation and properties of the more important compounds of : H, B, C, N, P, As, O, S, Cl, Br, I, Na, K, Cu, Ag, Mg, Ca, Ba, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe.

(“ Important compounds ” here means (a) compounds in common laboratory use for work up to Intermediate standard, or (b) compounds which have well-known uses.)

Sources and common processes for the manufacture or production of : H, He, Ne, A, O, N, Cl, Br, I, C, P, S ; Na, Cu, Ag, Mg, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe, Ni. (A knowledge of metallurgical and other manufacturing operations will not be required except in broad outline.) Common processes for the manufacture of the following materials :— Na_2CO_3 , NaHCO_3 , NaOH , CaO , SO_2 , H_2SO_4 , NH_3 , HNO_3 , HCl , hypochlorites, chlorates, bleaching powder, CO_2 and the fuel gases.

The chemistry involved in inorganic qualitative and volumetric analysis (see Part II).

The chemistry involved in the detection of C, H, N, Cl, Br, I, and S, in organic compounds. Calculation of empirical and molecular formulae from experimental data.

Elementary principles of Organic Chemistry including the following :—The quadrivalence of carbon and its power of forming stable bonds with non-metals and especially with itself. Relationship of structural formulae (excluding, except as mentioned below, the stereochemical aspect) of saturated open-chain hydrocarbons containing not more than 4 carbon atoms. Homology, Isomerism. Candidates should be able to give examples of structural isomerism, and should know why plane formulae are not universally acceptable, but they are not expected to be familiar with the formulae or behaviour of specific mirror-image or geometrical isomerides.

Typical properties conferred by substituents, emphasis being laid on the behaviour of groups rather than on the technique of preparation or recognition of individual substances. Nevertheless certain simple substances (mentioned below in parentheses) should be included among those selected as types ; candidates will be expected to be familiar with the usual origin or method of preparation and characteristics of these compounds. Substitution in saturated open-chain hydrocarbons (methane) by chlorine. The radicals $\text{C}_n\text{H}_{2n+1}$. Reactions of compounds $\text{C}_n\text{H}_{2n+1}\text{Cl}$ (Br or I) with alkali and ammonia. Alcohols of the general formula $\text{R}\cdot\text{CH}_2\cdot\text{OH}$ (methyl and ethyl alcohols), $\text{R}_2\text{CH}\cdot\text{OH}$, $\text{R}_3\text{C}\cdot\text{OH}$, and their behaviour towards sodium, phosphorus halides (or phosphorus together with halogens), hydrogen halides, oxidizing agents, and dehydrating agents, including sulphuric acid. Formation of ethers (diethyl ether). Unsaturated hydrocarbons, C_nH_{2n} (ethylene). Addition of H_2 , Cl_2 , Br_2 , and HBr to olefins. Action of alkali on the products formed from olefins by addition of Cl_2 or Br_2 (acetylene). The carbonyl group in aldehydes, $\text{R}\cdot\text{CHO}$, and ketones, R_2CO (formaldehyde, acetaldehyde, acetone). The action of reducing and oxidizing agents on these substances, and the addition of HCN to them. Monobasic carboxylic acids, $\text{R}\cdot\text{CO}_2\text{H}$ (formic and acetic acid). Reaction of acids with PCl_5 (acetyl chloride) and the behaviour of acid chlorides with water, alcohol, and ammonia. Esterification of acids (ethyl acetate) and the behaviour of esters towards acids, alkalis, and ammonia. Acid anhydrides (acetic anhydride), amides (acetamide) and their hydrolysis. Amines, RNH_2 , R_2NH and R_3N (methylamine, dimethylamine, trimethylamine).

Modifications of group function as illustrated by the following : Difference in the properties dependent on the group OH in alcohols and in acids. Differences exhibited by the group C=O in aldehydes and ketones on the one hand, and in acids, esters, etc., on the other. Differences in the properties of the NH₂ group in amines and amides.

The elementary principles of Physical Chemistry, which will find illustration throughout the subject-matter of the syllabus. The following topics should be included among those studied :—The properties of gases : The laws of Boyle, Charles, Avogadro, Gay-Lussac, and Graham, and the law of partial pressures. Difference of specific heats of gases at constant pressure and at constant volume. Ratio of the specific heats and its connection with atomicity treated empirically. Determination of molecular weights of gases and vapours. Thermal dissociation. The properties of solutions : Distribution law. Henry's law. Osmotic pressure. Proportionality of lowering of vapour pressure, raising of boiling point, and lowering of freezing point to molar concentration. Determination of molecular weights in solution. The essential differences between colloidal and true solutions. Electrolysis and electrolytic dissociation. Chemical equilibrium and simple applications of the law of mass action. Le Chatelier's principle. Solubility product. Simple treatment of the strength of acids and bases, indicators, and the hydrolysis of salts. Effect of concentration, temperature, and catalysts on rate of reaction. Exothermic and endothermic reactions. Hess's law.

II

Practical Examination

Qualitative analysis of simple mixtures of not more than four inorganic radicals. (Phosphate separations will not be required.)

Preparation and use of volumetric solutions of :—acids and alkalis, potassium permanganate, potassium dichromate, sodium thiosulphate, iodine, arsenious oxide, silver nitrate, and potassium thiocyanate.

Candidates may also be required to examine the action of heat and reagents on substances supplied and to identify well-known products, including gases, produced in the reactions. The practical exercises may also include the preparation and purification of substances by methods involving solution, precipitation, crystallization, distillation, and sublimation.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge. Centrifuge tubes. Water bath with cover pierced to take centrifuge tubes. Two long dropping pipettes. Micro burners. Wash bottles 100 cc. Polythene squeezing type. Crucibles 25 mm. and 15 mm. Spotting tiles (porcelain) and microscope slides. Assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in., and block to hold these and centrifuge tubes. Rack for dropping pipettes. Long thin spatula. Whatman papers (No. 120), 2 in. squares. Small porcelain dish. Forceps and tube holders. Anti-bumping tubes to fit in centrifuge tubes. Small conical flask 10 ml. Pyrex tube fitted for testing evolved gases. Reagents. Strong acids in pipettes. Jena T.K. bottles ; other common reagents in bottles fitted with dropping

Candidates are required to bring to the practical examination their *original* laboratory notebooks for inspection by the examiners, and they

may use their laboratory notebooks and also any other book or books they wish during the practical examination. All books and notebooks must be taken away by the candidates at the end of the examination.

These practical notebooks must contain a certificate by the teacher, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their notebooks a statement as to how they carried out their practical work.

Chinese (Classical)

[Two papers.]

1. Translation from specified texts with questions on their language and subject matter. For the purpose of transcription Cantonese will be accepted as an alternative to National Language.

Translation from unspecified texts.

2. Translation into Chinese. (National Language (Kuo Yü) will be accepted as an alternative to Literary Style.) Chinese history A.D. 1644-1834.

Czech

(Syllabus as for Albanian.)

Danish

(Syllabus as for Afrikaans.)

Dutch

(Syllabus as for Afrikaans.)

Economics

[Two papers.]

1. *Economics* :—

The Economic Structure of the United Kingdom

Population : size, sex- and age-distribution. Geographical and occupational distribution.

Industrial Structure : relative size of main industries, their location and organization including agriculture, coal, steel, textiles.

The Labour Market : trade unions and collective bargaining.

International Trade : visible and invisible imports and exports.

National Income and Output : meaning, composition and distribution.

Public Finance : the main sources of revenue and types of expenditure.

Financial Organization : the commercial banks. The Bank of England. The capital market.

Some Elements of Economic Analysis

Division of Labour. The Factors determining average income per head. Causes of Location of Industry. Advantages of International Trade.

An outline of the functions of the price-mechanism ; supply and demand in relation to the allocation of resources.

Causes and effects of changes in demand for and supply of goods and factors. Elasticities of demand and supply. The effects of maximum and minimum prices. The incidence of direct and indirect taxes. Causes and effects of monopoly.

The nature and function of money, banks, and the foreign exchange market. The measurement of changes in the general level of prices and their causes.

2. *English Economic History* :—

The outlines of the economic and social development of England. The questions will deal mainly with the period from the eighteenth century to the present day, but candidates should be familiar with the nature of the open-field system of farming, with the handicraft system of industry, and with the system of foreign trade which existed before 1700. The aim of the syllabus is to enable students to disentangle the causes as well as the course of economic and social change.

Agriculture. The history of agriculture to include changes in agrarian organization and farming methods, "high farming," and agricultural adjustments in the late nineteenth and early twentieth centuries.

Industry. The transition to industrialism. Factors in industrial development—invention and technological change, the application of science, the widening of internal and external markets, increasing productivity. Iron, coal, and textiles. The growth and extension of the factory system. Changes in the location of industry. Roads, canals, and evolution of railways. The course of railway legislation. The outline history of shipping from sail to steam. Cheap steel and the subsequent course of industrial change ; the new industries of the late nineteenth and early twentieth centuries. Industrial concentration and combination. The industrial policy of governments since the last quarter of the nineteenth century.

Commerce and Finance. Economic problems and policy during and after the American and French Wars. The growth of the liberal economy ; the establishment of free trade. The growth of the banking system before, and after, the Act of 1844. The financing of railways, the achievement of general limited liability and the spread of joint-stock organization. The expansion of home, and the changing character of foreign, trade. The growth and distribution of foreign investments. Major changes in the general price level. The alternation of good and bad times. Major changes in taxation and government expenditure. Tariff policy in the twentieth century. The economic consequences of twentieth-century wars.

Social Organization. The expansion of population. Changes in the mobility of labour. The problems created by the growth of towns. The declining influence of the land-owning classes. The growth and influence of the middle classes. The growth and composition of the working-classes ; changes in their standard of living ; the history of Trade Unionism ; the Co-operative movement. Changes in the franchise and their economic consequences. The social policy of governments including the history and break-up of the Poor Law, public health and factory legislation, education, the expansion of the social services.

Egyptian (Ancient)

(In 1954 only)

[Two papers.]

1. Translation from specified Middle Egyptian Texts. Middle Egyptian grammar.

(A. H. Gardiner : *Egyptian Grammar* (O.U.P.) is recommended.)

2. Unseen translation. Questions on the history of the period covered by the set texts and on their subject-matter.

English

[Two papers.]

1. Texts set for detailed study from the works of Chaucer, Shakespeare and either Spenser or Milton.

The paper will be literary rather than linguistic in character. Candidates should be able to discuss and criticise each of the books prescribed as a whole and also to identify and discuss the meaning and interest of significant passages in them.

2. Texts illustrative of the development of English Literature from 1579 to 1800 for more general study.

The paper will not include passages for identification and comment.

Ethics

[Two papers.]

1. Scope of Ethics. Moral concepts and judgments. General nature of desire and will. Conduct and character. Customary morality. Reflective morality. Theories of moral sense and of moral intuition. Conscience, conception of a moral end. Pleasure, happiness, moral excellence, etc. Relation of the individual to society. Duties and rights. Moral institutions. The ethical virtues. Human freedom and responsibility.

2. Leading ideas of Plato's *Republic*. Candidates will be expected to have read the following sections of the *Republic*, either in the original or in translation :

Books I to IV, V to 473, VII to 521, VIII, IX to 580, and X 612 to end.

Finnish

[Two papers.]

Grammar. Translation from Finnish. Composition :—(i) Translation from English, and (ii) some form of free composition.

The examination will include a test in writing from dictation and in correct reading ; there will also be an oral examination to test the candidate's knowledge of the spoken language.

(Books will not be prescribed.)

French

[Two papers.]

Grammar. Translation. Composition :—(i) Translation from English, and (ii) some form of free composition.

The examination will include a test in writing from dictation and in correct reading ; there will also be an oral examination to test the candidate's knowledge of the spoken language.

(Books will not be prescribed.)

Geography

(Two papers and an examination in map work. No candidate will be allowed to pass unless he satisfies the examiners in Map Work as well as in the written part of the examination.)

1. *General Geography* [one paper].—General principles as exemplified in the world considered as a whole.

The Earth's Crust : Nature of the earth's crust. The internal and external forces modifying the crust in so far as they determine :—(a) general structure and leading relief features of the continental masses and ocean basins ; (b) types and distributions of rocks, minerals and soils.

Climate :—Broad seasonal distribution of insolation, temperature, pressure, winds and rainfall, leading to a recognition of chief climate types and their associated weather conditions. (The physical conditions and movements of the oceans should be considered only in so far as they affect climate.)

Vegetation :—General distribution of forest, woodland, scrub and grassland in relation to climate, soil and relief.

Major Geographical Regions :—The division of the world into major geographical regions.

Human Geography :—The influence of the foregoing physical factors upon the distribution of man and upon the production of food and raw materials, and the consequent development of the geographical regions.

2. *Regional Geography* [one paper] :

(a) Europe with special reference to the British Isles, France, Germany, Italy, Switzerland and Scandinavia.

(b) North America with special reference to the north-eastern industrial areas, and the United States east of the Mississippi.

(c) The Monsoon lands, with special reference to the Indian Sub-Continent.

3. *Map Work* [one paper] :

The map work should be carried on in connection with the general and regional geography and should include :—The study of maps published by the Ordnance Survey of Great Britain ; the use and study of atlas maps, including the advantages and disadvantages of the principal projections employed, climate and weather maps ; cartographical and diagrammatic representation of geographical data.

Geology

[Two papers and a practical examination]

Physical Geology :

(a) The earth as a planet ; original and general characters of its chief surface features.

(b) The physical condition of the earth's crust and interior : evidences of internal activity such as volcanic, seismic, and diastrophic phenomena.

(c) General characters and inter-relationship of rocks.

(d) The work of geological agents : the circulation of rock material, including the processes of denudation, transport, deposition and deformation.

Mineralogy and Petrology :

(a) Elements of crystallography and crystallographic projection and notation.

(b) The common rock-forming and vein-forming minerals : their physical characters, chemical composition, and modes of origin and occurrence.

(c) The simpler optical properties of the common rock-forming minerals and the physical principles on which these properties depend.

(d) The general characters and relationships of the chief types of sedimentary, igneous, and metamorphic rocks.

Historical Geology :

The disposition of rocks and its representation on maps ; evidences of relative ages of rocks ; fossils, their preservation and distribution in rocks of different ages ; the geological systems, their broad characters and distribution in Great Britain.

Practical Examination

Intrepretation of simple geological maps in terms of rock-structure and its relation to topography ; expression of this interpretation by means

of sections ; graphic methods of finding thickness, dip and strike of beds, of completing outcrops, and of tracing the underground extension of strata.

Identification and description of common minerals and typical rocks, with and without the microscope ; exercises in projection of crystals : identification and description of crystal forms of common minerals, both on models and on actual crystals.

Reference of fossils to their broad biological groups and geological periods.

Candidates are required to bring to the practical examination their *original* laboratory notebooks for inspection by the examiners. These notebooks must be taken away at the close of the examination.

These practical notebooks must contain a certificate by the teacher, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their notebooks a statement as to how they carried out their practical work.

German

(Syllabus as for Afrikaans.)

Greek (Classical)

[Two papers.]

1. Set verse book.

Questions on Greek History from 776 to 323 B.C.

Questions on Grammar.

2. Set prose book.

Translation of sentences into Greek.

Translation into English of passages not prescribed.

(Candidates may offer additional passages of unseen translation in Greek, prose and verse, of a higher standard than that required of all candidates, as an alternative to the translation from, and questions on, set books. Such candidates will be required to give notice of their intention not later than 1 March if entering for the July examination, and not later than 1 September if entering for the November examination.)

All candidates must reach a reasonable standard in translation into Greek and in unseen translation from Greek.

Greek (Modern)

(Syllabus as for Albanian)

Gujarati

[Two papers.]

1. Translation from specified texts, with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Gujarati. Grammar.

Hebrew (Classical)

[Two papers.]

1. Translation from specified texts, with questions on their language and subject-matter. History : the Assyrian and Babylonian supremacy in western Asia from 800 to 586 B.C. Questions will be set on the historical and physical geography of Palestine in the period prescribed. Grammar.

2. Translation from unspecified texts. Translation into Hebrew. Pointing.

(The use of square character with full pointing in writing Hebrew is compulsory.)

Hindi

1. Translation from specified texts, with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Hindi. Grammar.

History

Any **two** of the following papers :—

- (a) Mediaeval English History, 43–1485.
- (b) Modern English History, 1485–1914.
- (c) Outlines of Mediaeval European History, 395–1500.
- (d) Outlines of Modern European History, 1500–1914.

History (Ancient)

[Two papers.]

1. The History of Egypt, Western Asia, Greece and Rome from the Earliest Dynasties to 336 B.C.

2. Greek History from 776 B.C. to 146 B.C.

3. Roman History from 753 B.C. to A.D. 337.

Candidates must take **either** Sections (1) and (2) **or** Sections (2) and (3).

History (Oriental)

Two papers on one of the following sections :—

- (a) Outlines of the History of the Near and Middle East from A.D. 600.
- or** (b) Outlines of the History of India ;
- or** (c) Outlines of the History of East Asia.

Hungarian

(Syllabus as for Albanian.)

Irish

[Two papers.]

1. Grammar. Unprepared translation. Composition.

2. Literary history : the period 1600–1800.

Set books.

Italian

(Syllabus as for French.)

Japanese (Classical)

[Two papers.]

1. (a) Translation from specified texts, with questions on their language.

(b) Translation from unspecified texts.

(c) Questions on the Japanese language.

2. (a) Translation into Japanese (Romaji or Japanese script).

(b) Questions on Japanese history, A.D. 1600–1868.

Japanese (Modern)

[Two papers.]

Grammar. Translation. Composition :—(i) Translation into Japanese, and (ii) some form of free composition.

The examination will also include writing from dictation, reading, and simple conversation.

(Books will not be prescribed).

Latin

[Two papers.]

1. Set verse book.

Questions on Roman History from 218 B.C. to A.D. 69.

Questions on grammar.

2. Translation of sentences into Latin. Set prose book.

Translation into English of passages not prescribed.

(Candidates may offer additional passages of unseen translation in Latin, prose and verse, of a higher standard than that required of all candidates, as an alternative to the translation from, and questions on, set books. Such candidates will be required to give notice of their intention not later than 1 March if entering for the July examination, and not later than 1 September if entering for the November examination.)

All candidates must reach a reasonable standard in translation into Latin and in unseen translation from Latin.

Logic

[Two papers.]

(This outline is intended to indicate the general scope and character of the syllabus without being exhaustive of all parts of the subject.)

Scope of Logic. Laws of thought. Terms. Formal division and definition. Predicables. Propositions and their import. Forms of immediate inference. Syllogism and other varieties of deductive reasoning. Trains of reasoning. Functions of syllogism. Inductive inference. Postulates of induction. Induction and analogy. The relation of induction to deduction. Theory of Scientific Method. Observation and experiment. Hypothesis. Empirical and causal laws. Methods of scientific explanation. Elimination of chance. Scientific definition and classification. Nomenclature and terminology. Fallacies.

Malay

[Two papers.]

1. Translation from specified texts, with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Malay. Grammar.

Marathi

[Two papers.]

1. Translation from specified texts, with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Marathi. Grammar.

Mathematics (Pure)

[Two papers.]

The theory of quadratic equations. The convergence of the geometric series. Permutations and combinations, including simple applications to probability. The binomial theorem for positive integral indices. The theory of indices. The nature and use of logarithms.

The geometry of similar rectilinear figures. Mensuration of plane rectilinear figures. The angles made by planes and straight lines with one another. Mensuration of simple solid figures, including the tetrahedron, cylinder, cone and sphere (the methods of the calculus may be used where suitable). Rectangular cartesian co-ordinates applied to the straight line, circle, parabola, ellipse, and hyperbola.

Plane trigonometry, up to and including the solution of triangles. Trigonometric, exponential, and logarithmic functions, and their graphs.

The definition of a derivative. Differentiation of x^n (n an integer, positive or negative), $\sin x$, $\cos x$, $\tan x$, e^x , and $\log x$. Differentiation of a sum, a product, a quotient, and in simple cases of a function of a function. Definite and indefinite integration of the above functions and of simple functions of them. Areas and volumes. Representation of equations by curves, with easy applications. Simple examples on maxima and minima.

Mathematics (Applied)

[Two papers.]

Equilibrium of one or more bodies under the action of uniplanar forces, or of parallel forces. Smoothly jointed frameworks, including graphical solutions. Properties of mass centres, and their determination in simple cases. Determination of second moments of solid figures. The laws of friction.

Relative velocity and acceleration, their resolution and composition. Graphical representation of relations between displacement, velocity, acceleration and time. Mass, momentum, force, impulse, work, energy, and power. Simple cases of direct and oblique impact. Motion under the action of a constant force. Rectilinear motion of two connected particles. Simple problems on the motion of projectiles. Uniform circular motion. The conical pendulum. Simple harmonic motion. Motion in a vertical circle under gravity. Motion of a rigid body about a fixed axis. Dimensions. Change of units.

Pressure of a fluid at a point. Magnitude and direction of resultant thrust of liquids on plane and spherical surfaces. Centres of pressure in simple cases. Resultant force of buoyancy on bodies partially or wholly immersed.

Elementary ideas of statistics. Frequency diagram. Calculation of the mean. Standard deviation. Standard deviation of the mean.

Mathematics (Pure and Applied)

[Three papers.]

The theory of quadratic equations. The convergence of the geometric series. The binomial theorem for positive integral indices. The theory of indices. The nature and use of logarithms.

The geometry of similar rectilinear figures. Mensuration of plane rectilinear figures. The angles made by planes and straight lines with one another. Mensuration of simple solid figures, including the tetrahedron, cylinder, cone and sphere (the methods of the calculus may be used where suitable). Rectangular cartesian co-ordinates applied to easy exercises on the straight line, the circle and the parabola.

Plane trigonometry up to and including the solution of triangles. Trigonometric, exponential and logarithmic functions, and their graphs.

The definition of a derivative.

Differentiation of x^n (n an integer, positive or negative), $\sin x$, $\cos x$, $\tan x$, e^x , and $\log x$. Differentiation of a sum, a product, a quotient, and in simple cases of a function of a function. Definite and indefinite integration of the above functions and simple functions of them. Areas and volumes. Representation of equations by curves, with easy applications. Simple examples on maxima and minima.

Equilibrium of one or more bodies under the action of uniplanar forces, or of parallel forces. Smoothly jointed frameworks, including graphical solutions. Properties of mass centres, and their determination in simple cases. Determination of second moments of simple figures. The laws of friction.

Relative velocity and acceleration, their resolution and composition. Graphical representation of relations between displacement, velocity, acceleration, and time. Mass, momentum, force, impulse, work, energy, and power. Simple cases of direct and oblique impact. Motion under the action of a constant force. Rectilinear motion of two connected particles. Simple problems on the motion of projectiles. Uniform circular motion. The conical pendulum. Simple harmonic motion. Motion in a vertical circle under gravity. Motion of a rigid body about a fixed axis. Dimensions. Change of units.

Military Studies

[Two papers and a practical examination.]

(Questions will be set involving (1) translation of French and German passages and (2) answers in regard to their subject-matter. Without answering the question set in *one* of these languages a candidate cannot make up the full number of questions to be answered. Additional credit is not given for a knowledge of more than one language. The use of French and German dictionaries, provided by the University, will be permitted.)

1. Paper 1 will be devoted mainly, but not exclusively, to the Principles of War.

2. Paper 2 will be devoted mainly, but not exclusively, to Military Geography.

3. The practical examination will consist of a test of Map Reading.

Music

[Two papers.]

1. *Harmony* in not more than four parts, for voices only. Candidates must show a competent knowledge of all diatonic triads, the dominant seventh and ninth, and secondary sevenths (with the available inversions of those chords), suspensions, passing notes and auxiliary notes (accented and unaccented, diatonic and chromatic), and modulation through a cycle of keys nearly related to the tonic key.

The tests under this heading may include :

- (i) The continuing of a melody of not less than eight bars in all, the opening of which will be given. The melody must modulate at least once, and return finally to the original key.
- (ii) The addition of a melodious bass to a given melody, or of a melodious upper part to a given bass (unfigured). In either case the added part must present features of independent movement.
- (iii) The harmonization of a melody in four vocal parts.

(iv) The writing of modulations between specified keys. Only the closely related keys will be asked for.

(Open score with C clefs will be required for at least one question.)

2. *Counterpoint* up to three parts for voices only..

(Open score with C clefs may be required.)

Norwegian

(Syllabus as for Afrikaans.)

Pali

[Two papers.]

1. Translation from specified texts with questions on their language and subject-matter. Grammar.

2. Translation from unspecified texts. Translation into Pali. Outline of Indian history from 6th century B.C. to 7th century A.D.

Candidates are required to use Roman script in writing Pali.

Persian (Classical)

[Two papers.]

1. Translation from specified and unspecified texts with questions on their language and subject-matter.

2. Translation into Persian. Grammar. Outlines of Persian history during the 9th and 10th centuries A.D.

(Platt : *Persian Grammar* (ed. Ranking) is recommended for the study of this paper.)

Physics

[Two papers and a practical examination].

Candidates will be expected to show an acquaintance with the fundamental principles of mechanics up to the standard of the Ordinary Level of the General Certificate of Education of the University of London and to have acquired a general knowledge of the apparatus by which the elementary principles of Physics are illustrated and applied.

General Properties of Solids, Liquids, and Gases

Relation between volume and pressure in gases. Friction and viscosity. Surface tension. Diffusion. Osmosis. Stretching of wires.

Heat

Temperature. Instruments for the measurement of temperature. Expansion of solids, liquids and gases with rise of temperature, isothermal and adiabatic expansion. Quantity of heat. Specific heat. Change of state. Latent heat. Vapour pressure. Boiling point. Dew-point. Formation of cloud, fog, and dew. Conduction. Definition of thermal conductivity. Convection. Radiation. Newton's Law of Cooling. The mechanical equivalent of heat and modes of determination. The conservation of energy.

Sound

The production and propagation of sound. Nature of wave-motion. Amplitude. Wave-length. Frequency. Experimental determination of the velocity of sound in air. Effect of change of temperature on

the velocity. Reflexion. Determination of frequency by simple methods. Experimental investigation of the modes of vibration of strings by means of the sonometer. Experimental investigation of the vibrations of air in pipes by resonance to tuning forks. Organ pipes. Position of nodes and antinodes.

Light

Propagation of light. Laws of reflexion and refraction. Photometry. Reflexion at plane and spherical surfaces and the formation of images. Refraction at plane surfaces and by prisms. Minimum deviation. Chromatic dispersion. The general laws of radiation: visible, ultra-violet, infra-red. Emission and absorption. Heating effects of radiation. Phosphorescence and fluorescence. The formation of images by single lenses. Long and short sight and their correction by lenses. The combination of two lenses to form a simple telescope or microscope. Measurement of velocity of light. Simple properties of polarized light.

Magnetism and Electricity

Properties of magnets. Simple phenomena of magnetization. The magnetic field: lines of force. The law of magnetic force. Magnetic moment. Intensity of magnetization. The earth as a magnet. The magnetic properties of iron and the elementary laws of the magnetic circuit. The simpler phenomena of electrified bodies. Conduction and insulation. Electrification by friction and by induction (influence). Distribution of electrification on conductors. Electric field: strength of field. The law of electric force. Potential. Capacity. Energy of charge. Electroscopes and electrometers. Electric current. Magnetic field of current. Magnetic measurement of current. Galvanometers. Work done by an electric current. Electromotive force. Difference of potential. Resistance. Ohm's Law. Wheatstone's Bridge. Potentiometer. Resistance of cells. Volt. Ohm. Ampere. Ammeters. Voltmeters. Heating effects of currents. Elementary phenomena of electrolysis: Faraday's Law. Voltameters. Primary and secondary batteries. Action on current circuits in a magnetic field. Electromagnetic induction: Faraday's Law; Lenz's Law; induction coil. A thermo-electric couple. Simple phenomena of discharge in gases.

Practical Examination

(The following scheme is not exhaustive, and is intended merely to show the general nature of the exercises at the practical examination. The examiners are not precluded from setting other exercises and practical problems illustrative of the principles set forth in the syllabus.)

Measurements of length, mass and time, involving eye-estimation of tenths of a division, use of vernier, use of the balance (weighing to one centigram), use of a seconds-hand watch. Determination of volumes. Specific gravities of solids, powders, and liquids. Use of the hydrometer. Verification of Boyle's Law. Determination of the centre of gravity of a plate. Determination of g by simple pendulum. Determination of velocity of sound in a tube by resonance with a fork. Use of the sonometer. Use of thermometers and determination of fixed points. Simple methods of determining specific heat and latent heat of fusion and evaporation. Determination of dew-point. Use of simple photometers. Focal lengths of mirrors. Focal lengths of lenses. Arrangement of two lenses to make simple forms of telescope, microscope, and projection lantern. Simple use of spectrometer. Tracing the path of a ray of light through a block of glass and deduction of refrac-

tive index. Refractive index by method of apparent thickness. Tracing the lines of force in the neighbourhood of a magnet. Comparison of magnetic moments and fields. Measurement of resistance of wires and cells. Comparison of electromotive forces with potentiometer. Measurement of electro-chemical equivalent.

Candidates are required to bring to the practical examination their *original* laboratory notebooks for inspection by the examiners. These notebooks must be taken away at the close of the examination.

These notebooks must contain a certificate by the teacher, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their notebooks a statement as to how they carried out their practical work.

Polish

(Syllabus as for Albanian.)

Portuguese

(Syllabus as for French.)

Roumanian

(Syllabus as for Bulgarian.)

Russian

(Syllabus as for Albanian.)

Sanskrit

[Two papers.]

1. Translation from specified texts with questions on their language and subject-matter. Grammar.

2. Translation from unspecified texts. Translation into Sanskrit. Outline of Indian history from 6th century B.C. to 7th century A.D.

(A satisfactory standard must be reached in each section of both papers. Importance is attached to Sandhi, and to the correct spelling of Sanskrit words, whether in Nagari script or in transliteration. Candidates may use either Nagari or Roman script when answering grammar questions or translating short sentences into Sanskrit, but in translating connected passages the Nagari script must be used.)

Scottish Gaelic

[Two papers.]

1. Grammar. Unprepared translation. Composition.

2. Literary history : the period 1650-1800.

Set books.

Serbo-Croat

(Syllabus as for Albanian.)

Candidates may use either the Cyrillic script (for Serbian) or the Latin script (for Croat) provided they are consistent.

Sinhalese

[Two papers.]

1. Translation from specified texts, with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Sinhalese. Grammar.

Slovak

(Syllabus as for Albanian.)

Slovene

(Syllabus as for Albanian.)

Spanish

(Syllabus as for French.)

Swedish

(Syllabus as for Afrikaans.)

Tamil

[Two papers.]

1. Translation from specified texts, with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Tamil. Questions on grammar.

(V.R. Rāmachandra Dikshitar : *Studies in Tamil Literature and History* (University of Madras) is recommended for study.)

Telugu

(In 1954 only)

[Two papers.]

1. Translation from specified texts, with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Telugu. Grammar.

Theology

Any **two** of the following papers :—

1. *New Testament Greek* [one paper]. Grammar and Composition. The Greek text of St. Mark's Gospel.

(The text and apparatus used by the examiners and recommended for the use of candidates is that contained in the *Novum Testamentum Graece : Editio Altera*, ed. Alexander Souter, Oxford, Clarendon Press, 1947.)

2. *Old Testament* [one paper]. Doctrine of God and the Messianic Hope. The Covenant Relation. Conceptions of Salvation, Redemption, and Life after Death.

3. *New Testament* [one paper]. The Person and Work of Christ as presented in the Gospels and interpreted in the Epistles. The Doctrine of the Last Things.

Tibetan

Candidates offering this subject are recommended to offer it in conjunction with Sanskrit or Chinese (Classical).

[Two papers.]

1. Translation from specified texts, with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Tibetan. Grammar.

Turkish

[Two papers.]

1. Translation from specified modern texts, with questions on their language and subject-matter.
2. Translation from unspecified modern texts ; translation into modern Turkish ; questions on grammar.

Urdu

[Two papers.]

1. Translation from specified texts, with questions on their language and subject-matter.
2. Translation from unspecified texts. Translation into Urdu. Grammar.

Welsh

[Two papers.]

1. Grammar. Unprepared translation. Composition.
2. Literary history : the period 1650-1900.
Set books.

Zoology

[Two papers and a practical examination.]

1. A study of the structure and of the elementary physiology of the rabbit.
2. The structure, mode of life and life-history of the following animals, to illustrate the general characteristics of animal organization :—
Amœba, *Euglena*, *Paramecium*, *Hydra*, *Obelia*, the earthworm, the crayfish, *Amphioxus*, the dogfish, frog and rabbit.
3. Elementary physiology : metabolism : nutrition (digestion, assimilation and food storage), respiration, excretion, movement, response to stimuli and reflex action ; growth and reproduction. The differences between plants and animals.
4. The modifications of structure, habit and life-history associated with parasitism (including the mode of transmission from host to host) as exemplified by *Monocystis*, *Trypanosoma*, the malarial parasite, the liver-fluke and the tape-worm.
Symbiosis.
5. The principles of classification and nomenclature. A discussion of the systematic position of the animals mentioned in paragraphs 2 and 4, and of their place in their respective phyla, and of these phyla in the animal kingdom.
6. The structure of a cell. Cell division. The multi-cellular organism illustrating morphological differentiation and the division of labour. The essential characteristics of the following :—epithelial tissues ; connective and supporting tissues (including the process of ossification) ; blood and lymph ; muscular tissues ; nervous tissues.
7. Sexual and asexual reproduction. The chief types of ova. Gameto-genesis. Fertilization and cleavage. The germ layers and their formation in *Amphioxus*, frog and chick. The development and metamorphosis of the frog. The development of the chick up to the end of the third day of incubation. The development and functions of the foetal membranes of the chick and mammal.

8. Variation and heredity, including a simple treatment of the facts of genetics and nuclear cytology.

9. The evidence bearing on the occurrence of organic evolution. The theories of Lamarck and Darwin as to the method of evolution.

Practical Work

Observations on living animals should be made wherever possible. Candidates are expected to make adequate labelled drawings of all the preparations they examine and of all the dissections they make.

The dissection, or microscopical examination of whole mounts and sections, of the animals mentioned in paragraphs 2 and 4 (except the malarial parasite and *Trypanosoma*.)

The examination of the skeleton of the vertebrate types mentioned in paragraph 2, together with the skull of the dog.

The examination of preparations representing the chief varieties of the tissues mentioned in paragraph 6.

The examination of prepared sections of the following vertebrate organs :—skin, stomach, intestine, liver, kidney, ovary, testis and spinal cord.

The preparation of stained permanent mounts of suitable whole animals, parts of animals and tissues.

A study of the external changes during the development of the frog from fertilization to the end of metamorphosis.

The examination of whole mounts of and representative sections through :

(a) The early stages of frog development to the time of the first appearance of the external gills.

(b) Stages illustrating the development of the chick during the first, second and third days.

Practical Examination

The candidate must be prepared to examine microscopically, to dissect, and to describe specimens of parts of the animals comprised in paragraphs 2 and 4 in the foregoing syllabus and to determine the zoological position of specimens in accordance with paragraph 5 above.

Candidates are required to bring to the practical examination their *original* laboratory notebooks for inspection by the examiners. These notebooks must be taken away at the close of the examination.

These practical notebooks must contain a certificate by the teacher, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their notebooks a statement as to how they carried out their practical work.

B.A. EXAMINATION (GENERAL AND HONOURS)

Detailed Regulations with Syllabuses and Set Books for the B.A. Degree (General and Honours), for Degrees in Architecture and for the M.A. and D.Lit. Degrees are published in separate pamphlets which may be obtained on application to the External Registrar.

The following summary of the Regulations for the B.A. General Degree and the B.A. Honours Degree is provided to indicate to the student who has not yet passed the Intermediate Examination in Arts or obtained the necessary qualifications for Direct Entry to the Final Examination the subjects and options which may be offered at Final Examinations.

A student who has passed the Intermediate Examination in Arts or has obtained the necessary qualifications for Direct Entry to the Final Examination should obtain a copy of the full Regulations for the Degree to which he proposes to proceed.

The B.A. General and Honours Examinations are held once in each year, beginning, except for B.A. Honours in Architecture, on the first Thursday after 3 June.

The B.A. General Degree will be awarded to candidates who satisfy the examiners at the General Examination in **three** subjects ; successful candidates will be classified in three divisions.

The B.A. Honours Degree will be awarded to candidates who satisfy the examiners at the Honours Examination in **one** principal subject ; successful candidates will receive First, Second or Third Class Honours. The Second Class Honours Lists will be sub-divided into an upper and lower division, except in the case of Architecture, Geography (Old Regulations), Mathematics and Psychology.

QUALIFICATIONS FOR ADMISSION

To be admitted to the B.A. Honours or General Examination each candidate must (a) have satisfied the minimum University and Faculty entrance requirements ; (b) have been registered as an External Student preparing for the degree of B.A. (General or Honours) at least three academic years previously ; (c) have satisfied the conditions for Direct Entry to the B.A. General or Honours Examination or have completed the Intermediate Examination in Arts, not less than two academic years earlier, or three academic years earlier where the Regulations so prescribe ; and (d) have obtained approval of candidature for the B.A. Examination.

(Further details of the qualifications for admission for candidates who have already obtained a Degree of this University are given in the regulations.)

B.A. GENERAL EXAMINATION

The following subjects may be offered at the General Examination. Candidates must choose **three**.

Afrikaans	Hindi	Psychology
Albanian	History	Roumanian
Anthropology	Hungarian	Russian
Arabic (Classical)	Irish	Sanskrit
Armenian	Italian	Scottish Gaelic
History of Art	Japanese (Classical)	Serbo-Croat and Slovene (in 1954 only)
Bengali	Latin	Serbo-Croat (in and after 1955)
Bulgarian	Law	Sinhalese (in 1954 only)
Burmese	Logic	Slovene (in and after 1955)
Chinese (Classical)	Malay	Spanish
Chinese (Modern)	Marathi	Swedish
Czech and Slovak	Mathematics (Pure)	Tamil
Danish	Mathematics (Applied)	Telugu (in 1954 only)
Dutch	Military Studies	Theology
Economics	Music	Turkish
English	Old Norse	Urdu
Ethics	Norwegian	Welsh
French	Pali	
Geography	Persian (Classical)	
German	History of Philosophy	
Greek (Classical)	Polish	
Greek (Modern)	Portuguese	
Gujarati	Pre-history of Western Europe	
Hebrew (Classical)		

No candidate will be permitted to offer both Afrikaans and Dutch, or both Chinese (Classical) and Chinese (Modern), at the same examination.

The examination will be conducted mainly by means of printed papers ; but the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

There will be three written papers in each subject, with the following exceptions :—

Geography	two written papers, a written examination on practical work, and submission of notebooks.
All modern foreign languages (except Oriental)	three written papers and an oral examination.
Pre-history of Western Europe ..	two written papers and a practical examination.
Psychology	two written papers, a practical examination, and submission of notebooks.

Candidates will not be approved by the examiners unless they have shown a competent knowledge in each of the three subjects which they have selected.

All answers to examination questions shall be written in English unless instructions are given to the contrary.

No exemptions are granted at this examination.

B.A. HONOURS EXAMINATION

1. The following principal subjects may be offered at the B.A. Honours Examination. Candidates must choose **one**.

Arabic (Classical)	*Hungarian Language and Literature
Architecture	Italian
*History of Art	Japanese (Classical)
Celtic	Japanese (Modern)
*Central European Regional Studies	Latin
Chinese (Classical)	Malay
Chinese (Modern)	Mathematics
Classics	Pali (with Sanskrit)
Czech and Slovak Language and Literature	Persian (Classical)
Dutch	Philosophy
English	Polish Language and Literature
French	Portuguese
Geography	Psychology
German	Russian Language and Literature
Greek	*Russian Regional Studies
Hebrew	Sanskrit
History :—	Scandinavian Languages
I Ancient and Mediaeval History, or	Serbo-Croat and Slovene Language and Literature (in 1954 only)
II Mediaeval and Modern History, or	Serbo-Croat Language and Literature (in and after 1955)
III Oriental History with special reference to the History of India, or	*Sociology
IV Oriental History with special reference to the History of the Near and Middle East, or	*South - East European Regional Studies
V Oriental History with special reference to the History of the Far East and South-East Asia	Spanish
	Turkish

Candidates offering one of the **principal subjects** set out in the table below must also satisfy the examiners in a **subsidiary subject**, unless exempted :—

Celtic	Portuguese
Czech and Slovak Language and Literature	Psychology
Dutch	Russian Language and Literature
French	Scandinavian Languages
Geography	Serbo-Croat and Slovene Language and Literature (in 1954 only)
German	Serbo-Croat Language and Literature (in and after 1955)
Hungarian Language and Literature	Sociology
Italian	Spanish
Malay	
Polish Language and Literature	
(Further details are given in the regulations.)	

* Candidates wishing to offer this subject must obtain special permission to do so from the University when applying for registration and must produce satisfactory evidence of their previous training and/or facilities for study.

2. A candidate who fails to satisfy the examiners in an Honours B.A. Examination shall in no case be allowed a B.A. General Degree.

3. A candidate who enters for examination in the principal and subsidiary subjects on the same occasion and fails in the subsidiary subject will, if the examiners have recommended him for First or Second Class Honours in the principal subject, be credited provisionally with such Honours and allowed to enter for re-examination in the subsidiary subject alone, on one subsequent occasion only, and within one year from the publication of the Pass List for the examination in question ; if he is then successful, the Degree will be awarded. A candidate who is recommended for Third Class Honours in his principal subject and fails in his subsidiary subject will not be credited with any part of the examination.

4. Failure in the principal subject does not involve re-examination in the subsidiary subject, whether a pass has been obtained in the subsidiary subject earlier than, or on the same occasion as, the examination in the principal subject.

5. The examination in the subsidiary subject may be taken on the same occasion as the Honours Examination, or at any General Examination previously, provided (i) that the Intermediate Examination has already been passed ; (ii) that the candidate has been registered for the examination not later than one month before the last date of entry to the General Examination at which he proposes to present himself.

6. All answers to examination questions shall be written in English unless instructions are given to the contrary.

EXEMPTIONS

No exemptions are given from any part of the principal subject examination. Exemption from the subsidiary subject examination is only given on the results of examinations of this University, as follows :—

1. Candidates who have obtained the B.A. or B.Sc. Degree either as Internal or as External Students are exempt from examination in a subsidiary subject, provided that a subject in which they have passed is included in the list of subsidiary subjects for the B.A. Honours Examination to which they intend to proceed.

2. Candidates who have obtained the B.D., B.Mus., B.Sc. (Econ.) or B.Com. Degree either as Internal or as External Students are exempt from examination in the subsidiary subjects of Theology, Music or Economics respectively.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the B.A. Examination during the period October—November in the year next but one preceding the examination and not later than 7 December in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 7 December, applications may be accepted after that date on payment of a late fee of £1 is., which is not returnable, but no application will be accepted after 1 December in the year preceding the examination from a candidate proceeding to B.A. Honours in Mathematics (Advanced Subjects) or after 28 January in the year of the examination in all other cases.

ENTRY TO EXAMINATION

The candidate lists (except in Mathematics, Advanced Subjects—Old Syllabus, for examinations up to 1955 only), will be opened on 17 January. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 21 February, and the candidate lists will be closed on 28 February.

For Mathematics, Advanced Subjects (Old Syllabus—for examinations up to 1955 only), the candidate list will be opened on 20 November. Entry forms will not be despatched by post from the University after 24 December, and the candidate list will be closed on 1 January.

No entry can be accepted after the candidate lists have been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows (for each entry) :—

	£	s.
B.A. General	12	12
Supplementary subject	2	2
B.A. Honours :—		
Principal and subsidiary subjects	13	13
Principal subject (where subsidiary not required)	13	13
Principal subject if exempt from subsidiary subject, first entry	13	13
do each subsequent entry	11	11
Subsidiary subject only	2	2
Principal subject only (after passing subsidiary subject)	11	11

Mathematics, Advanced Subjects (Old Syllabus)

	£	s.
B.A. Honours in Mathematics and Advanced Subjects taken together	13	13
Advanced Subjects taken within two years from date of passing B.A. Honours in Mathematics ..	No	fee
Advanced Subjects taken more than two years from date of passing B.A. Honours in Mathematics ..	2	2
Re-entry in Advanced Subjects	3	3

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix).

SUPPLEMENTARY SUBJECTS

Candidates who have passed the B.A. Examination, whether General or Honours, are admissible to B.A. General for examination in one or more supplementary subjects.

INTERMEDIATE EXAMINATION IN ARTS

SET BOOKS APPENDIX

In this Appendix are given the lists of books set for the next two years, and, provisionally, for the third year. Candidates should be careful to consult the appropriate list.

Candidates who make use of the provisional list should obtain the Regulations issued in September next to ascertain whether any alterations have been made.

UNIVERSITY LIBRARY

Most of the books listed in this Appendix are in the University of London Library, and may be borrowed under the regulations applying to the General Library. Where a particular edition of a book is specified in the Appendix, the copy or copies which are available in the University Library are not necessarily the same.

IMPORTANT NOTE

Except in the case of volumes of selections or anthologies, the editions of set texts given in this Appendix are indicated only for the convenience of candidates. Candidates may study set texts in any accurately printed edition.

INTERMEDIATE EXAMINATION IN ARTS

Internal Students at Bedford College, Birbeck College, King's College, Queen Mary College, Royal Holloway College, the School of Oriental and African Studies, University College and Westfield College are warned that special texts may be prescribed for the Special Intermediate examinations which may be held at these Colleges. Details may be obtained from the authorities of the Colleges concerned.

Arabic (Classical)

1954, 1955 and (provisionally) 1956

August Fisher : *Arabische Chrestomathie* (Harrassowitz, Leipzig, 1948, pp. 1-120, 171-183).

Armenian (Classical)

1954, 1955 and (provisionally) 1956

Eliseus : *History*, chapters I-III, pp. 5-165 (Venice, 1893).

Armenian (Modern)

1954, 1955 and (provisionally) 1956

F. Macler : *Chrestomathie de l'Arménien Moderne* (Paris, 1932).

Bengali

1954, 1955 and (provisionally) 1956

(a) Saratchandra Chatterji : *Bindur Chele*.

(b) Rabindranath Tagore ; *Gītāñjali*, 1-10 ; *Cithi Patra*, Vol. IV, pp. 214-225.

(c) *Intermediate Bengali Selections* (Calcutta University Press, 1947) : Bankimchandra Chatterji : *Ekā* ; Girischandra Ghosh : *Vivekānanda* ; R. C. Dutt : *Haldighātār Yuddha* ; B. C. Pal : *Baṅgadarśan o Bankimcandra*.

In 1954 only, Internal candidates whose mother tongue is not Bengali may, if they wish, offer only (a) and (b), on condition that they submit to an oral test, including dictation, reading a printed text, and conversation.

Burmese

1954, 1955 and (provisionally) 1956

Selections from Jataka Stories (ed. Saya Pwa), Vol. I, items 5-9 inclusive.

Maung Sein Tin and others : *Khitsan Ponbyin*, Vol. I, Part I, items 1, 6, 8-10 ; Part III, item 1 ; Part IV, items 2, 7 ; Part V, item 1.

U Kha : *Chwetagyin*, Part I.

Chinese (Classical)

1954, 1955 and (provisionally) 1956

Either J. J. Brandt : *Introduction to Literary Chinese*, Lessons I-XVI (2nd edition, 1936, pp. 1-128), *excluding* parallel modern texts, illustrative examples and letters,

or J. J. Brandt : *Introduction to Literary Chinese*, Lessons I-X (2nd edition, 1936, pp. 1-84), *including* parallel modern texts but *excluding* illustrative examples and letters, and W. Simon (ed.) : *1200 Basic Chinese Characters*, Books 1-2 (London, 2nd edition, 1947).

Egyptian (Ancient)

1954 only

A. de Buck : *Egyptian Reading Book I* (Leiden, 1948), pp. 79–88 (The Story of the Miracles which happened in the Time of Cheops).

English

Internal Students taking the Special Intermediate examination in English should see the Note at the beginning of this Appendix.

1954

Paper I

Chaucer : *The Clerk's Tale*.

Shakespeare : *Much Ado about Nothing* ; *Antony and Cleopatra*.

Spenser : *The Faerie Queene*, Book I.

Paper 2

Marlowe : *Dr. Faustus*.

Jonson : *Volpone*.

Massinger : *A New Way to Pay Old Debts*.

Either Donne : *Poetry and Prose* (ed. Garrod, Clarendon series),

or Cowley : *Poetry and Prose* (ed. Martin, Clarendon series).

Walton : *Lives of Donne and Herbert*.

Dryden : *Absalom and Achitophel*, Part I.

Pope : *The Rape of the Lock*.

Johnson : *Rasselas*.

Sheridan : *The Rivals*.

Goldsmith : *The Vicar of Wakefield*.

Cowper : *Poetry and Prose* (ed. Milford, Clarendon series).

Jane Austen : *Pride and Prejudice*.

1955

Paper I

Chaucer : *The Pardoner's Prologue and Tale*.

Shakespeare : *Much Ado About Nothing* ; *Julius Caesar*.

Milton : *Samson Agonistes*.

Paper 2

Marlowe : *Edward II*.

Jonson : *Every Man in His Humour*.

Massinger : *A New Way to Pay Old Debts*.

Either Donne : *Poetry and Prose* (ed. Garrod, Clarendon series),

or Cowley : *Poetry and Prose* (ed. Martin, Clarendon series).

Walton : *Lives of Donne and Herbert*.

Bunyan : *The Pilgrim's Progress*, Parts I and II.

Pope : *The Rape of the Lock*.

Johnson : *Rasselas*.

Goldsmith : *She Stoops to Conquer* ; *The Vicar of Wakefield*.

Cowper : *Poetry and Prose* (ed. Milford, Clarendon series).

Jane Austen : *Northanger Abbey*.

1956 (provisional)

Paper I

Chaucer : *The Nun's Priest's Tale* and *The Prioress's Tale*.

Shakespeare : *Julius Caesar* ; *As You Like It*.

Spenser : *The Faerie Queene*, Book I.

Paper 2

Marlowe : *Edward II*.
 Jonson : *Every Man in his Humour*.
 Either Heywood : *A Woman Killed with Kindness*,
 or Webster : *The Duchess of Malfi*.
 Herrick : *Hesperides*.
 Bunyan : *The Pilgrim's Progress*, Parts I and II.
 Milton : *Paradise Lost*, Books IX and X.
 Pope : *Moral Essays*, IV ('To Burlington').
 Johnson : *Life of Collins*.
 Goldsmith : *She Stoops to Conquer* ; *The Deserted Village*.
 Collins : *Poems*.
 Sterne : *A Sentimental Journey*.
 Gibbon : *Autobiography*.
 Austen : *Northanger Abbey*.

Greek (Classical)

The texts used by the examiners in setting the examination papers will be the Oxford Classical Texts (Clarendon Press) unless some other text is specified.

1954

Plato : *Apology*.
 Euripides : *Medea* (omitting 96-213, 410-445, 627-662, 976-1001, 1136-1230).

1955

Thucydides : Book IV, chapters 1-41.
 Homer : *Iliad*, Book I.

1956 (provisional)

Plato : *Republic*, Book I (to 347E).
 Sophocles : *Ajax*, 1-865.

Gujarati

1954

- (a) Premānand : *Okhāharan*.
- (b) Nandśaṅkar Tuljaśaṅkar : *Karaṇ Ghelo*, chapters 7-12.
- (c) Navalrām Laksmirām : *Navalagranthāvali*, Part II (ed. Shroff, 1915) : pp. 80-90 ; 134-147 ; 181-187 ; 312-316.
- (d) Dhūmketu : *Tāṇkhā-maṇḍal*, Part I, pp. 1-54.

In 1954 only, Internal candidates whose mother tongue is not, Gujarati may, if they wish, offer only (b) and (d) on condition that they submit to an oral test, including dictation, reading a printed text, and conversation.

1955 and (provisionally) 1956

Premānand : *Māmerum* (Dr. Taraporewala's Collections, pp. 362-384).
 Nandśaṅkar Tuljaśaṅkar : *Karaṇ Ghelo*, chapters 7-12.
 Navalrām Laksmirām : *Navalagranthāvali*, Part II (ed. Shroff, 1915) : pp. 80-90 ; 134-147 ; 181-187 ; 312-316.
 Dhūmketu : *Tāṇkhā-maṇḍal*, Part I, pp. 1-54.

Hebrew (Classical)**1954***Judges ; Psalms LI-LXXII.***1955***II Samuel ; Psalms LI-LXXII.***1956 (provisional)***II Samuel ; Psalms LXXIII-LXXIX.***Hindi****1954 and 1955***Prem Cand : Mānsarovar* (Benares, 1936), Vol. I, pp. 1-122.
Maithilī Śaran Gupta : Jayadrath-vadh, Sarg I-IV.**1956 (provisional)***Prem Cand : Mānsarovar*, II, the first six stories (Sārasvatī Press, Banaras).*Maithilī Śaran Gupta : Jayadrath-vadh*, Sarg I-IV (Sāhitya Sadan, Jhansi).**Irish****For External Students only.****1954, 1955 and (provisionally) 1956****Early Modern Irish***O. Bergin : Sgéalaigheacht Chéitinn: Stories from Keating's History of Ireland* (published for the Royal Irish Academy, Hodges, Figgis & Co., Dublin).*T. F. O'Rahilly : Laoithe Cumainn* (Cork University Press, 1925).**Modern Irish***Ua Laoghaire : Mo Sgéal Féin* (Browne & Nolan, Dublin).*T. F. O'Rahilly : Búrdúin Bheaga* (Browne & Nolan, Dublin, 1925).**Japanese (Classical)****1954, 1955 and (provisionally) 1956***A. Rose-Innes : Japanese Reading for Beginners*, Vol. IV (Literary Style), pp. 1-100.**Latin**

The texts used by the examiners in setting the examination papers will be the Oxford Classical Texts (Clarendon Press) unless some other text is specified.

1954*Livy : Book II, chapters 1-40.**Virgil : Aeneid, Book IV.***1955***Cicero : In Catilinam*, I, II, III.*Horace : Odes*, Book I (omitting 6, 8, 13, 15, 16, 19, 23, 25, 30).**1956 (provisional)***Livy, Book XXI*, 1-47.*Virgil : Aeneid, Book II* (omitting lines 567-623).

Malay**1954, 1955 and (provisionally) 1956****Either** *Pēlayaran 'Abdullah, or Pēlbagai Chētera Mēlayu*, Part II. *Sējarah Mēlayu* (ed. Winstedt), chapters I–X.**Marathi****1954**H. M. Lambert : *Marathi Language Course* (Oxford University Press).N. S. Phadke : *Navyā Gujagoshṭi* (Ramakrishna Book Depot, Bombay 4).D. G. Kelkar : *Shri Mahārāshṭra Śārādā* : Poems by Ṭīlak, Keshavasut, Tāmbe and Mādhav Julian (Keśav Bhikāji Dhavaḷe, Bombay).**1955 and (provisionally) 1956**H. M. Lambert : *Marathi Language Course* (Oxford University Press).N. S. Phadke : *Gujagoshṭi* (Ramakrishna Book Depot, Bombay 4).D. G. Kelkar : *Shri Mahārāshṭra Śārādā* : Poems by Keshavasut Yashvant and Govindāgraja (Keśav Bhikāji Dhavaḷe, Bombay).**Pali****1954, 1955 and (provisionally) 1956***Mahāvamsa*, chapters 30–32 inclusive.*Dhammapada Commentary* on Dhṛp. verses 334–359 (*Taṇhāvagga*) (P.T.S. ed., Vol. IV, pp. 37–82).**Persian (Classical)****1954, 1955 and (provisionally) 1956**Sa'dī : *Gulistān*, chapters I and II (without *Muqaddima*).Ibn al-Balkhī : *Fārs Nāma* (ed. G. Le Strange & R. A. Nicholson, Cambridge University Press, 1921), pp. 60–119.**Sanskrit****1954, 1955 and (provisionally) 1956**Lanman : *Sanskrit Reader* (Cambridge University Press), I–XXXIV (Selections from Nala, Hitopadeśa, Kathāsaritsāgara, Manu, Rgveda).**Scottish Gaelic****For External Students only.****1954, 1955 and (provisionally) 1956***Bardacht Ghaidhlig* (ed. Watson).*Rosg Gaidhlig* (ed. Watson), pp. 1–132.**Sinhalese****1954, 1955 and (provisionally) 1956**(a) *Butsarana* (ed. Vālivīṭiye Sorata, 1931), from p. 207 up to the end.(b) *Sasadāvata* (ed. Aturuvālle Dhammapāla, 1934).(c) *Pārakumbā Sirita* (ed. Sir D. B. Jayatilaka).(d) Martin Wickremasinghe : *Yugāntaya*.**In 1954 only**, candidates whose mother tongue is not Sinhalese may, if they wish, offer only (a), (b) and (c), on condition that they submit to an oral test, including dictation, reading a printed text, and conversation.

Tamil

1954

- (a) V. G. Sūryanārāyaṇa Śāstri : *History of the Tamil Language* (Naṭarājan, Madura).
 (b) **Either** A. V. Venkaṭarāma Aiyar : *Life and Times of Chalukya Vikramāditya VI* (Abhirāma Aiyar, Madras Commercial Press),
or Sāminātha Aiyar : *Pudiyadum Palaiyadum* (New and Old, Twenty Essays) (K. Subrahmanyam, "Tyagaraja Vilas," Triplicane, Madras).
 (c) *Naladiyār*, chapters 11–20.
 (d) S. R. Subramania Kavirāyar : *Villiputtūrar Mahābhāratam, Calliaparuvam* (Tamil Sangam Press, Madura).

In 1954 only, Internal candidates whose mother tongue is not Tamil may, if they wish, offer only (a), (b) and (c), on condition that they submit to an oral test, including dictation, reading a printed text, and conversation.

1955 and (provisionally) 1956

- Rāmasāmi Pulavar : *Tamil Pulavar Varisai*, Vols. I and II (Saiva Siddhanta Publishing Co., Madras).
 Sāminātha Aiyar : *Pudiyadum Palaiyadum* (New and Old, Twenty Essays) (K. Subrahmanyam, "Tyagaraja Vilas," Triplicane, Madras).
Nāladiyār, chapters 11–20, with commentary.
 Subramania Kavirāyar : *Villiputtūrar Mahābhāratam, Calliaparuvam* (Tamil Sangam Press, Madura).

Telugu

For External Students only.

1954 only

- Rukmaṇikalyāṇamu* (V. Ramaswamy Sastrulu, Madras).
Kumārīśatakamu (V. Ramaswamy Sastrulu, Madras).
Bālakāṇḍamu, Rāmāyaṇamu.
Chitrālēkha.

Tibetan

1954, 1955 and (provisionally) 1956

- hDzaṅs bLun* (ed. I. J. Schmidt), pp. 73–81, 147–159.
Suvarṇaprabhāsottamasūtra (ed. Nobel), pp. 156–165.
Udānavarga (ed. Hermann Beckh), chapters II, IV, X and XII.

Turkish

1954, 1955 and (provisionally) 1956

- P. Wittek : *Turkish* (Lund Humphries Modern Language Readers, London, 1945).
 Reşat Nuri Güntekin : *Anadolu notlari* (Istanbul, n.d.).

Urdu

1954

- (a) Nazir Aḥmad : *Mirāt ul-‘Arūs.*
 (b) Mir Hasan : *Maṣnavī*, from *Āghāz-i Dāstān.*

In 1954 only, candidates whose mother tongue is not Urdu may, if they wish, offer only the first half of (a) and (b), on condition that they submit to an oral test, including dictation, reading a printed text, and conversation.

1955 and (provisionally) 1956

Hādi Hasan Rusvā : *Sharifzāda*.

Mīr Hasan : *Maṣnavī*, from *Āghāz-i Dāstān*.

Welsh

For External Students only.

1954

Mediaeval Welsh

Breudwyt Ronabwy (ed. Melville Richards).

Manawydan uab Llyr in Pedeir Keinc y Mabinogi (ed. Ifor Williams).

Modern Welsh

Morgan Llwyd : *Llyfr y Tri Aderyn* (ed. Ellis & Davies).

David Owen (Brutus) : *Wil Brydydd y Coed* (ed. Thomas Jones).

Blodeugerdd o'r Ddeunawfed Ganrif (ed. D. Gwenallt Jones, new edition, 1947), pp. 16–66.

Robert ap Gwilym Ddu, detholion o'i weithiau (ed. S. J. Williams).

1955

Mediaeval Welsh

Branwen uerch Lyr in Pedeir Keinc y Mabinogi (ed. Ifor Williams).

Breudwyt Ronabwy (ed. Melville Richards).

Modern Welsh

Hanes y Ffydd yng Nghymru (Detholiad o'r Ffydd Ddi-ffuant) (ed. Hugh Bevan).

Blodeugerdd o'r Ddeunawfed Ganrif (ed. D. Gwenallt Jones, new edition, 1947), pp. 36–88.

Samuel Roberts : *Cilhaul Uchaf* (ed. Iorwerth C. Peate).

Robert ap Gwilym Ddu, detholion o'i weithiau (ed. S. J. Williams).

1956 (provisional)

Mediaeval Welsh

Math uab Mathonwy in Pedeir Keinc y Mabinogi (ed. Ifor Williams).

Breudwyt Ronabwy (ed. Melville Richards).

Modern Welsh

Ellis Wynne : *Gweledigaethu y Bardd Cwsc*.

Glanffrwd : *Llanwynno* (ed. Henry Lewis).

Blodeugerdd o'r Ddeunawfed Ganrif (ed. D. Gwenallt Jones, new edition, 1947), pp. 16–66.

Islwyn, Detholion o'i Farddoniaeth (ed. T. H. Parry-Williams).

UNIVERSITY OF LONDON



REGULATIONS FOR THE FINAL EXAMINATIONS FOR B.A. GENERAL AND B.A. HONOURS for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the year preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations, which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

B.A. EXAMINATION (GENERAL AND HONOURS)

[Regulations for the Intermediate Examination in Arts, for Degrees in Architecture and for the M.A. and D.Lit. Degrees are published in separate pamphlets, which may be obtained on application to the External Registrar.]

1. The B.A. General Degree will be awarded to candidates who satisfy the examiners at the General Examination in three subjects ; successful candidates will be classified in three divisions.

2. The B.A. Honours Degree will be awarded to candidates who satisfy the examiners at the Honours Examination in one subject ; successful candidates will receive First, Second or Third Class Honours. The Second Class Honours Lists will be subdivided into an upper and lower division, except in the case of Architecture, Geography (Old Regulations), Mathematics and Psychology.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the B.A. Honours or General Examination each candidate must (a) have satisfied the minimum University and Faculty entrance requirements ; (b) have been registered as an External Student preparing for the degree of B.A. (General or Honours) at least three academic years previously ; (c) have satisfied the conditions for Direct Entry to the B.A. General or Honours Examination or have completed the Intermediate Examination in Arts, not less than two academic years earlier, or three academic years earlier where the Regulations so prescribe ; and (d) have obtained approval of candidature for the B.A. Examination.

2. Candidates who have obtained the B.A. Pass or General Degree may not re-enter for B.A. General, but may enter for B.A. Honours.

3. Candidates who have passed the B.Sc. General Examination with one or more subjects which are common to the B.A. and B.Sc. General Examination, and who enter subsequently for the B.A. General Examination, will be allowed to offer as one of the subjects (and only one) a subject in which they have already passed at the B.Sc. General.

4. Candidates who have obtained the B.A. Honours Degree may enter for B.A. General provided that they do not offer any of the subjects taken for their B.A. Honours Degree.

5. Candidates who have obtained the B.A. Honours Degree may not re-enter for the examination in the same subject with a view to improving their class of Honours. Nevertheless, candidates who before 1921 obtained B.A. Honours in Mediaeval and Modern Languages may re-enter for B.A. Honours in Mediaeval and Modern Languages under the current regulations.

6. Candidates who have obtained the B.A. Honours Degree may, however, re-enter for the examination in *another* subject, except that candidates who have obtained B.A. Honours in Classics are not permitted to re-enter for B.A. Honours in Latin or Greek, nor are candidates who before 1923 obtained the B.A. Honours Degree in Mathematics permitted to proceed to the examination in Mathematics, Advanced Subjects (Old Syllabus) or the examination in Mathematics (Revised Syllabus).

7. Candidates who have obtained the B.Sc. Special (or before 1926 the B.Sc. Honours) Degree in Geography, Mathematics or Psychology, are not permitted to proceed to B.A. Honours in the same subject.

8. Candidates who have obtained the B.Sc. (Sociology) Degree, or the B.Sc. (Economics) Degree with Sociology or with Social Anthropology

as the Special Subject, are not permitted to proceed to the B.A. Honours Examination in Sociology.

DATE OF EXAMINATION

The B.A. Examination shall take place once in each year, and shall commence, except for Honours in Architecture, in the week beginning on the Thursday after 3 June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the B.A. Examination during the period October-November in the year next but one preceding the examination and not later than 7 December in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 7 December, applications may be accepted after that date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 1 December of the year preceding the examination from a candidate proceeding to B.A. Honours in Mathematics (Advanced Subjects) or after 28 January in the year of the examination in all other cases.

ENTRY TO EXAMINATION

The candidate lists (except in Mathematics, Advanced Subjects—Old Syllabus, for examinations up to 1955) will be opened on 17 January. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 21 February, and the candidate lists will be closed on 28 February.

For Mathematics, Advanced Subjects (Old Syllabus, for examinations up to 1955), the candidate list will be opened on 20 November. Entry forms will not be despatched by post from the University after 24 December, and the candidate list will be closed on 1 January.

No entry can be accepted after the candidate lists have been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows (for each entry) :—

	£	s.
B.A. General	12	12
Supplementary subject	2	2
B.A. Honours :—		
Principal and subsidiary subjects	13	13
Principal subject (where subsidiary not required) ..	13	13
Principal subject if exempt from subsidiary subject,		
first entry	13	13
Each subsequent entry	11	11
Subsidiary subject only	2	2
Principal subject only (after passing subsidiary subject)	11	11
<i>Mathematics, Advanced Subjects (Old Syllabus)</i>		
B.A. Honours in Mathematics and Advanced Subjects		
taken together	13	13

Advanced Subjects taken within two years from date of passing B.A. Honours in Mathematics	£	s.
Advanced Subjects taken more than two years from date of passing B.A. Honours in Mathematics	no	fee
Re-entry in Advanced Subjects	2	2
	3	3

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SUPPLEMENTARY SUBJECTS

Candidates who have passed the B.A. Examination, whether General or Honours, are admissible to B.A. General for examination in one or more supplementary subjects.

TIME TABLE

The examination will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. At two o'clock on 15 August, the External Registrar will publish (a) a list of the successful candidates at the General Examination arranged in three divisions; (b) a list of the candidates who have passed an Honours Examination, arranged by the examiners under their respective subjects in three classes, and in alphabetical order in each class. The Second Class Honours List will be subdivided into an upper and lower division, except in the case of Architecture, Geography (Old Regulations), Mathematics, and Psychology.

2. A copy of the Pass List will be sent to each successful candidate, and an individual notification will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following regulations:—

(1) The following candidates are eligible to apply for an Aegrotat Degree:—

(a) Candidates at the B.A. General Examination who have satisfied the examiners in two subjects and have completed part of the examination in the third subject.

(b) Candidates at the B.A. Honours Examination

- (i) who have entered for examination in both principal and subsidiary subjects and have completed more than half of the examination ;
- (ii) who, having already passed in, or been exempted from, the subsidiary subject, have entered for examination in the principal subject only and have completed more than half of the examination in the principal subject ;
- (iii) who, having previously been credited with First or Second Class Honours in the principal subject, have entered for re-examination in the subsidiary subject only and have completed half of the examination in such subsidiary subject.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the pass lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.A. under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

B.A. GENERAL**SCHEME OF EXAMINATION**

1. Candidates will be examined in any *three* of the following subjects :—

Afrikaans	Economics	Italian
Albanian	English	Japanese (Classical)
Anthropology	Ethics	Latin
Arabic (Classical)	French	Law
Armenian	Geography	Logic
History of Art	German	Malay
Bengali	Greek (Classical)	Marathi
Bulgarian	Greek (Modern)	Mathematics (Pure)
Burmese	Gujarati	Mathematics (Applied)
Chinese (Classical)	Hebrew (Classical)	Military Studies
Chinese (Modern)	Hindi	Music
Czech and Slovak	History	Old Norse
Danish	Hungarian	Norwegian
Dutch	Irish	Pali

Persian (Classical)	Scottish Gaelic	Spanish
History of Philosophy	Serbo-Croat and	Swedish
Polish	Slovene (In 1954	Tamil
Portuguese	only)	Telugu (In 1954
Prehistory of Western	Serbo-Croat (In	only)
Europe	and after 1955)	Theology
Psychology	Sinhalese (In 1954	Turkish
Roumanian	only)	Urdu
Russian	Slovene (In and	Welsh
Sanskrit	after 1955)	

No candidate will be permitted to offer both Afrikaans and Dutch, or both Chinese (Classical) and Chinese (Modern), at the same examination.

2. The examination will be conducted mainly by means of printed papers ; but the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

3. There will be three written papers in each subject, with the following exceptions :—

Geography	.. .. .	two written papers, a written examination on practical work, and submission of note-books.
All modern foreign languages (except Oriental)		three written papers and an oral examination.
Prehistory of Western Europe	..	two written papers and a practical examination.
Psychology	.. .. .	two written papers, a practical examination, and submission of note-books.

4. Candidates will not be approved by the examiners unless they have shown a competent knowledge in each of the three subjects which they have selected.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

6. No exemptions are granted at this examination.

SYLLABUSES FOR B.A. GENERAL

(A list of all the set books and special subjects will be found in the Appendix to these regulations.)

Afrikaans

1. Translation from and into Afrikaans. An essay.
2. History of Afrikaans Literature. History of Dutch Literature to 1880. Set Dutch and Afrikaans texts.
3. Outlines of Dutch Historical Grammar to 1700. Outlines of Afrikaans Historical Grammar. The development of Standard Afrikaans. An easy Middle Dutch text.

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Albanian

1. (a) Translation into English, and
either (b) Translation into Albanian,
or (c) Composition in Albanian (a choice of subject is given).
2. **Either** (a) Elementary Albanian historical grammar including the place of Albanian in the Indo-European family, Latin elements in Albanian, and readings from Don Gjon Buzuk,
or (b) A general knowledge of Albanian history, with special reference to the period since 1878.
3. A general knowledge of Albanian literature, with special reference to modern trends.

There will be an oral examination which will test the candidates' knowledge of the spoken language.

(Candidates must state, when applying for approval of candidature, which options in Papers 1 and 2 they select.)

Anthropology**Physical Anthropology**

Zoological.—Man's place in nature as evidenced by the study of comparative anatomy and physiology ; special attention being paid to the group anthropomorpha.

Palaeontological.—The antiquity of Man as evidenced by fossil and semi-fossilized remains.

Physiological and Psychological.—A comparative study of the bodily functions and mental processes ; special attention being paid to the comparative study of the senses.

Ethnological.—A comparative study of the physical characters which distinguish the various races and sub-races of Man. Classification of the Human Race in accordance with physical characters. Geographical distribution of races, etc., and the influence of environment on physique.

Cultural Anthropology

Archaeological.—The antiquity of Man as revealed by the earliest remains of his handiwork. The prehistoric periods, their characteristics, sequence, and duration. The survival of early conditions of culture in later times.

Technological.—The comparative study of Arts and Industries ; their origin, development and geographical distribution.

Sociological.—Comparative study of social phenomena and organization. Birth, education, marriage, and death customs and systems. Tribal and other associations, government and laws. Moral ideas and codes. Magical and religious practices.

Linguistic.—Elementary comparative study of language.

Ethnological.—Comparative study and classification of peoples, based upon cultural conditions and characteristics. Influence of environment upon culture.

The three papers are to be selected from the following :—

- (i) Social Anthropology.
- (ii) Racial Evolution and Variation.
- (iii) Cultural Evolution in Prehistoric Europe and the Near East.

(iv) Primitive Technology.

(v) *Ethnography of a Special Area.

*Areas approved for selection are :—

- (a) Eastern Africa.
- (b) Central Africa.
- (c) Western Africa.
- (d) Southern Africa.
- (e) America north of Mexico—Amerindian and Eskimo cultures.
- (f) India (tribal cultures).
- (g) South-eastern Asia.
- (h) Pacific Islands (Melanesia, Polynesia and Micronesia).
- (i) Australia and New Guinea.

(Candidates must state, when applying for approval of candidature, which papers they select and, if offering Ethnography, which Special Area.)

Arabic (Classical)

1. Translation from set texts with questions on their language and subject-matter.

2. In 1954 only, Translation from unspecified texts. Translation into Arabic ; in and after 1955, Translation from unspecified texts Grammar.

3. In 1954 only, Grammar. History of the Muslim Empire from A.D. 750 to 833 ; in and after 1955, Translation into Arabic. History of the Muslim Empire from A.D. 750 to 833.

Armenian

1. Translation from set texts with questions on their language and subject-matter (both Classical and Modern texts will be set).

2. Translation from unspecified Classical and Modern Texts. Translation into Armenian.

(Candidates may write in Classical Armenian or Modern Armenian, either Western or Eastern.)

3. Questions on Language and Literature. The following periods of literature are to be studied :—(a) 5th century A.D., (b) 1850–1920.

History of Art

Three of the following subjects, of which not more than two may be taken from either section.

(Candidates must state, when applying for approval of candidature, which subjects, and in subject A1 which option, they select.)

Section A

1. Either (a) Greek and Roman Sculpture,
or (b) Mediaeval painting in England, France and the Netherlands, with special reference to :—

- (i) England c. 700—c. 1500.
- (ii) France c. 1200—c. 1500.
- (iii) The Netherlands c. 1350—c. 1500.

2. Italian painting from c. 1250—c. 1600, with special reference to :—

- (a) Schools of Florence and Siena in the 13th and 14th centuries.
- (b) Schools of Florence, Umbria, Venice and the Venetian Mainland in the 15th century.
- (c) Schools of Florence, Venice, Rome, Lombardy and Emilia in the 16th century.

- (d) The Carracci and Caravaggio.
3. European painting in the 17th and 18th centuries.

Section B

1. Greek, Roman and Byzantine Architecture, treated on the following lines :—

A general study of these three types of Architecture, with reference to their origin, development, and the social and historical conditions which affected their evolution. Candidates will be expected to illustrate their work when possible by means of sketches.

2. Architecture in Western Europe from c. 800—c. 1500, including Germany, Italy and Spain.

A study of Architecture in Western Europe from c. 800—c. 1500, including Germany, Italy and Spain, with special reference to the surviving examples in each country. Candidates will be required to have a knowledge of the historical and social conditions which affected the development of these styles in each country and to illustrate their work when possible by means of sketches.

3. Architecture in Italy in the 15th century and in Italy, France and England in the 16th and 17th centuries.

A study of Architecture in Italy in the 15th century and in Italy, France and England in the 16th and 17th centuries, with special reference to surviving examples in each country, and to the influence exerted by the great architects of the period. Candidates will be required to have a knowledge of the historical and social conditions which affected the development of these styles in each country, and to illustrate their work when possible by means of sketches.

Bengali

1. Translation from set texts with questions on their language and subject-matter.
 2. Translation from unspecified texts. Translation into Bengali.
 3. Language, literature and grammar.
- An elementary knowledge of Sanskrit will be assumed.

Bulgarian

1. (a) Translation into English, and
either (b) Translation into Bulgarian,
or (c) Composition in Bulgarian (a choice of subject is given).
2. **Either** (a) Elementary Bulgarian historical grammar and the place of Bulgarian in the Slavonic family.
or (b) A general knowledge of Bulgarian history, with special reference to the period since 1878.
3. **Either** (a) A general knowledge of Bulgarian literature, with special reference to the period since 1762.
or (b) A general knowledge of the economic development of Bulgaria, with special reference to the period since 1800. (For candidates offering Paper 2(b) only.)

There will be an oral examination which will test the candidate's knowledge of the spoken language.

(Candidates must state, when applying for approval of candidature, which options in Papers 1, 2, and 3 they select.)

Burmese

1. Translation from set texts with questions on their language and subject-matter.
2. Translation from unspecified texts. Translation into Burmese.
3. Language, literature and grammar.

Chinese (Classical)

1. Translation from specified texts with questions on their language, literary form and subject-matter.
2. Translation from unspecified texts.
3. Translation into Chinese. Period of Chinese history : the Manchu Dynasty.

National Language (Kuo Yü) will be accepted as an alternative to Literary Style.

Chinese (Modern)

1. Translation from specified texts with questions on their language, literary form and subject-matter.
2. Translation from unspecified texts.
3. Translation into Chinese. History of China, 1834-1911.

Czech and Slovak

1. **either** (a) Translation into English from Czech and Slovak, and
or (b) Translation into Czech **or** Slovak,
(c) Composition in Czech **or** Slovak (a choice of subject is given).

In the translation and essay papers, candidates must use either Czech or Slovak consistently.

2. **Either** (a) Elementary Czech and Slovak Historical Grammar, and the place of Czech and Slovak in the Slavonic family.
or (b) A general knowledge of Czech and Slovak history, with special reference to the period since 1780.
3. **Either** (a) A general knowledge of Czech and Slovak literature, with special reference to the period since 1780.
or (b) A general knowledge of the economic development of the Czechs and Slovaks, with special reference to the period since 1800. (For candidates offering Paper 2(b) only.)

There will be an oral examination which will test the candidate's knowledge of the spoken language.

(Candidates must state, when applying for approval of candidature, which options in Papers 1, 2, and 3 they select.)

Danish

1. Translation from and into Danish. An essay in Danish.
2. Set modern texts.
3. Outlines of the history of Danish literature. Outlines of Historical Grammar.

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Dutch

1. Translation from and into Dutch. An essay in Dutch.
2. Outlines of the history of Dutch literature. Set modern texts.
3. Outlines of Historical Grammar, with the study of an easy Middle Dutch text.

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Economics

1. Economic History :—

The social and economic history of England with special reference to the period subsequent to 1760.

2. Principles of Economics :—

The principles of Economics, including theories of population, production, value, distribution, money and banking, and international trade.

3. Applied Economics :—

Applications of economic principles to the analysis of contemporary problems of production, trade, labour, money and public finance.

English

1. (a) Old and Middle English set texts.
(b) Old and Middle English Literature, and (at the option of the candidate) the History of the English Language.
2. (a) English Literature 1579–1700 with prescribed books.
(b) Shakespeare and *either* Spenser *or* Milton (as prescribed by the University) : set books.
3. A later period of English Literature, with special reference to set authors.

Ethics

1. General Principles of Ethics :—

The nature of ethical judgments. The relation of Ethics to the natural sciences and to metaphysics. Action, causation, and motivation. The moral predicament. Types of motive and their relations. Free choice and determination. The grounds of choice : the good and the right. Natural good and moral good. Theories of the good ; utilitarianism, moral sense, self-realization, etc. Egoism, altruism, and the common good. The nature of right : *prima facie* and true duties. Conscience, its nature, authority and education. Morality and the community. Moral and political obligation. Morality and religion.

2. History of Ethics :—

Outlines of Greek Ethics to Aristotle ; the Stoics ; Epicurus ; modern hedonistic theories (Hobbes, Bentham, and J. S. Mill) ; moral sense theories (Shaftesbury, Hutcheson, and Hume) ; intuitionist theories (Cudworth, More, Clarke, and Reid) ; Butler ; Kant.

3. Prescribed Texts :—

Selected works of a leading moralist, ancient or modern, or of a leading ethical school.

French

1. Composition (translation into French). Translation of unseen French passages.

2. General study of the literature of the 17th and 18th centuries, with prescribed texts.

3. In 1954, General study of the literature of the 19th century, with prescribed texts ; in and after 1955, General study of the literature of the 19th century, with prescribed texts, and study of one 20th century text.

One question in each of papers 2 and 3 must be answered in French.

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Geography

The examination will consist of two written papers and a written examination of not more than six hours on practical work, and of inspection by the examiners of the note-books and any other evidence of his practical work in the field that the candidate may wish to submit.

No candidate will be allowed to pass unless he satisfies the examiners in the practical parts as well as in the written part of the examination, nor unless the original note-books or other evidence of practical work in the field reach an adequate standard.

1. Europe (including British Isles) and the Mediterranean lands of Africa and Asia.

2. (a) One of the following areas :—

- (i) Asia, excluding the Mediterranean lands.
- (ii) North America.
- (iii) Africa, south of the Mediterranean lands.
- (iv) South America.
- (v) Australia, New Zealand, and the Pacific Islands.

(Candidates must state, when applying for approval of candidature, which option they select.)

(b) General Physical Geography.

3. Practical examination on the sections I and II below.

SYLLABUS

Regional Geography.—The relief and land-forms in relation to the structure and climate. The distribution of soils and minerals. The river systems. Climate and weather conditions. The neighbouring seas and oceans, and their influence on the lands and their inhabitants. The distribution of natural vegetation, cultivated products, and animals. The sources of mechanical power. The distribution of industries as related to the foregoing physical factors. Trade centres and trade routes ; the character of the trade. The distribution of population ; the chief racial, religious and linguistic characteristics of the people. A synthetic study of geographical regions. States and the interrelations of political, economic, and physical conditions.

General Physical Geography.—A broad knowledge of the physical geography of the world to serve as a basis for the study of regional geography.

The earth as a planet ; its movements and relation to the sun ; the consequent distribution and seasonal variation of insolation over the earth's surface.

The atmosphere. Distribution and periodic variation of the pressure and temperature of the air, of air movements and wind systems, of humidity and precipitation ; climate types and regions.

The oceans. Form of sea and ocean beds. Temperature and salinity of oceans and seas ; wave and tidal movements and their effects ; ocean circulation, its origin and effects.

The lands. General classification of the materials of the earth's crust—sedimentary, igneous, and metamorphic rocks ; crustal movements—the normal cycle of erosion and its principal interruptions ; processes of denudation and deposition ; chief effects of glaciation ; development of river systems.

Practical Work

I. Representation and interpretation by maps and diagrams : (a) land forms ; (b) their development ; (c) their relation to structure ; (d) their influence on human geography. Candidates will be expected to have done field work on these topics and to be familiar with maps of the Ordnance Survey, Geological Survey, and the International 1 to 1 million map.

II. Principles of Surveying, including an elementary knowledge of the following instruments : prismatic compass, plane-table, clinometer, aneroid barometer, chain, theodolite.

The principles of the following map projections :—Conical with one or two standard parallels, Bonne, polyconic, international, sinusoidal, Mollweide, Mercator, zenithal equidistant, zenithal equal area, and zenithal orthomorphic or stereographic. Candidates are expected to know the principle underlying each projection, its defects, and its suitability for particular purposes or areas.

Construction and interpretation of weather and climate maps. The cartographic and diagrammatic representation of geographical data.

German

1. Translation from and into German. An essay in German.
2. History of German Literature from 1150 to 1250 and from 1740 to 1914. Set modern texts.
3. Outlines of Historical Grammar. An easy Middle High German text.

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Greek (Classical)

1. Prose composition and translation at sight. Candidates will be required to satisfy the examiners in each part of this paper.

2. Passages for translation from prescribed books. A question on the metres of the prescribed verse books.

3. (a) A question requiring grammatical comment on passages chosen from the prescribed books.

(b) Essay questions on the prescribed books.

(c) Questions at the candidate's choice on **one** of the following:—

(i) Greek History from 600 to 404 B.C.

(ii) History of Ideas in Classical Antiquity.

The main features of Greek religion and philosophy as exhibited in the following phases and thinkers : the religion of Homer ; the Orphic and Eleusinian mysteries ; the chief Pre-Socratic philosophers (Thales, Anaximander, Anaximenes, Heraclitus, Pythagoras, Xenophanes, Parmenides, Anaxagoras, Leucippus and Democritus) ; the chief Sophists (Protagoras, Hippias, Gorgias and Thrasymachus) ; Socrates ; the Cynics ; the Cyrenaics ; Plato ; Aristotle ; Epicurus ; the Stoics.

The following books are recommended for study :—

Text-books :—

F. M. Cornford : *Greek Religious Thought*, pp. vii-xxvi, 1-48, 171-233.

E. Zeller : *Outlines of the History of Greek Philosophy* (13th ed., revised by Nestle and translated by L. R. Palmer), pp. 1-241.

For further reading :—

W. K. C. Guthrie : *The Greek Philosophers from Thales to Aristotle*.

R. D. Hicks : *Stoic and Epicurean*.

(iii) Greek Social and Political Institutions :—

(a) The Greek Polis.

(b) The Athenian Empire and Society.

The following books are recommended for study :—

Text-books :—

(a) G. Glotz : *The Greek City and its Institutions*.

(b) A. Zimmern : *The Greek Commonwealth* (4th or 5th ed.).

For further reading :—

W. R. Halliday : *The Growth of the City-State*.

V. Ehrenberg : *The People of Aristophanes* (2nd ed.).

J. B. Bury : *History of Greece* (3rd ed., revised by R. Meiggs).

For reference :—

M. Rostovtzeff : *History of the Ancient World*, vol. I, chs. xii-xxiii.

(iv) Outlines of Greek Sculpture and Painting, 7th-1st century B.C. Candidates should show some knowledge of the chief (1) pieces or groups of sculpture, (2) pottery-wares, and (3) Hellenistic murals preserved in Roman copies, and should be able to date them approximately.

The following books are recommended for study :—

General Handbook :—

J. D. Beazley and B. Ashmole : *Greek Sculpture and Painting*.

For further reading :—

G. M. A. Richter : *Archaic Greek Art, and The Sculpture and Sculptors of the Greeks*.

A. W. Lawrence : *Classical Sculpture*, chs. 1-15.

A. Lane : *Greek Pottery*.

E. Pfuhl : *Masterpieces of Greek Drawing and Painting* (translated by Beazley).

G. M. A. Richter : *Attic Red-figured Vases*.

Picture-books :—

F. Gerke : *Griechische Plastik*.H. Bulle : *Schöner Mensch*.E. Pfuhl : *Malerei und Zeichnung der Griechen*,
vol. III.

Section (ii) or (iv) may be offered as part of the examination in *either* Greek or Latin, but not in both.

(Candidates must state when applying for approval of candidature, which option they select.)

Greek (Modern)

1. **either** (a) Translation into English, and
or (b) Translation into Modern Greek,
(c) Composition in Modern Greek (a choice of subject is given).
2. **Either** (a) Elementary Greek historical grammar from the beginning of the 12th century A.D.
or (b) The history, including the economic history, of Greece 1081-1669.
3. **Either** (a) A general knowledge of Greek demotic literature from the beginning of the 12th century, with special reference to the period since 1821.
or (b) The history, including the economic history, of Greece 1669-1936. (For candidates offering Paper 2(b) only.)

There will be an oral examination which will test the candidate's knowledge of the spoken language.

(Candidates must state, when applying for approval of candidature, which options in Papers 1, 2 and 3 they select.)

Gujarati

1. Translation from set texts with questions on their language and subject-matter.
 2. Translation from unspecified texts. Translation into Gujarati.
 3. Language, literature and grammar.
- An elementary knowledge of Sanskrit will be assumed.

Hebrew (Classical)

1. Translation from specified texts, with questions on their language and subject-matter. Translation from unspecified texts.
2. Translation into Hebrew. Grammar. Pointing.
3. History of the Hebrew monarchy down to 586 B.C. Geography (historical and physical) of Palestine with special reference to the set texts.

Hindi

1. Translation from set texts with questions on their language and subject-matter.
 2. Translation from unspecified texts. Translation into Hindi.
 3. Language, literature and grammar.
- An elementary knowledge of Sanskrit will be assumed.

History

1 and 2. **Two** of the following (one paper on each) :—

- (a) History of Greece to 146 B.C.
- (b) History of Rome to A.D. 325.
- (c) Mediaeval European History from the middle of the 4th to the end of the 15th century.
- (d) Mediaeval English History to the end of the 15th century.
- (e) Modern English History from the beginning of the 16th century.
- (f) Modern European History from the beginning of the 16th century.

Candidates must offer (a) and (b), or (b) and (c), or (c) and (d), or (d) and (e), or (e) and (f), **and must state, when applying for approval of candidature, which papers under 1 and 2 and which option under 3 they select.**

3. **One** of the following :—

- (g) Greek and Roman Constitutions.
- (h) The Religions of Greece and Rome down to A.D. 325.
- (i) English Constitutional History.
- (j) English Economic History.
- (k) British Colonial History.
- (l) Diplomatic Relations of the Great Powers since 1815.

Hungarian

- 1. **either** (a) Translation into English, and
or (b) Translation into Hungarian,
or (c) Composition in Hungarian (a choice of subject is given).
- 2. **Either** (a) Elementary Hungarian Historical Grammar, and the place of Hungarian in the Finno-Ugrian family.
or (b) A general knowledge of Hungarian history, with special reference to the period since 1790.
- 3. **Either** (a) A general knowledge of Hungarian literature, with special reference to the period since 1830.
or (b) A general knowledge of the economic development of Hungary, with special reference to the period since 1830. (For candidates offering Paper 2(b) only.)

There will be an oral examination which will test the candidate's knowledge of the spoken language.

(Candidates must state, when applying for approval of candidature, which options in Papers 1, 2 and 3 they select.)

Irish

- 1. Composition (translation into modern Irish). Unseen translation from late middle or early modern Irish. Grammar of Irish in the modern and early modern periods.
- 2. Translation from set books (old Irish). Outlines of old Irish grammar.
- 3. Translation from set books (late middle and early modern Irish). Questions on metre and on the historical and literary background of the set books.

Italian

1. Composition (translation into Italian). Unseen translation from Italian.

2. Outlines of the history of Italian literature from Dante to Tasso, with special reference to the *Divina Commedia*. Set texts.

3. A general study of Italian literature from 1816 to the present day, with set texts.

One compulsory question in the nature of an essay, to be answered in Italian, will be set in each of papers 2 and 3.

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Japanese (Classical)

1. Translation from specified texts with questions on their language, literary form and subject-matter.

2. Translation from unspecified texts. Translation into Japanese (Japanese script).

3. Language. Japanese history A.D. 1185-1867.

Latin

1. Prose composition and translation at sight. Candidates will be required to satisfy the examiners in each part of this paper.

2. Passages for translation from prescribed books. A question on the metres of the prescribed verse books.

3. (a) A question requiring grammatical comment on passages chosen from the prescribed books.

(b) Essay questions on the prescribed books.

(c) Questions at the candidate's choice on **one** of the following :—

(i) Roman History from 70 B.C. to A.D. 180.

(ii) History of Ideas in Classical Antiquity.

The main features of Greek religion and philosophy as exhibited in the following phases and thinkers : the religion of Homer ; the Orphic and Eleusinian mysteries ; the chief Pre-Socratic philosophers (Thales, Anaximander, Anaximenes, Heraclitus, Pythagoras, Xenophanes, Parmenides, Anaxagoras, Leucippus and Democritus) ; the chief Sophists (Protagoras, Hippias, Gorgias and Thrasyllus) ; Socrates ; the Cynics ; the Cyrenaics ; Plato ; Aristotle ; Epicurus ; the Stoics.

The following books are recommended for study :—

Text-books :—

F. M. Cornford : *Greek Religious Thought*, pp. vii-xxvi, 1-48, 171-233.

E. Zeller : *Outlines of the History of Greek Philosophy* (13th ed., revised by Nestle and translated by L. R. Palmer), pp. 1-241.

For further reading :—

W. K. C. Guthrie : *The Greek Philosophers from Thales to Aristotle*.

R. D. Hicks : *Stoic and Epicurean*.

(iii) Roman Social and Political Institutions :—

(a) The Roman State and Empire.

(b) Roman Society in the Late Republic and Early Empire.

The following books are recommended for study :—

Text-books :—

- (a) L. Homo : *Roman Political Institutions*.
G. H. Stevenson : *Roman Provincial Administration*.
- (b) W. Warde Fowler : *Social Life in Rome in the Age of Cicero*.
J. Carcopino : *Daily Life in Ancient Rome*.

For further reading :—

- R. W. Moore : *The Roman Commonwealth*.
Cambridge Ancient History, vol. IX, ch. 19, and vol. XI, ch. 19.
- M. Cary : *History of Rome*.

For reference :—

- M. Rostovtzeff : *History of the Ancient World*, vol. II.

- (iv) Outlines of Greek Sculpture and Painting, 7th-1st century B.C. Candidates should show some knowledge of the chief (1) pieces or groups of sculpture, (2) pottery-wares, and (3) Hellenistic murals preserved in Roman copies, and should be able to date them approximately.

The following books are recommended for study :—

General Handbook :—

- J. D. Beazley and B. Ashmole : *Greek Sculpture and Painting*.

For further reading :—

- G. M. A. Richter : *Archaic Greek Art, and The Sculpture and Sculptors of the Greeks*.
- A. W. Lawrence : *Classical Sculpture*, chs. 1-15.
- A. Lane : *Greek Pottery*.
- E. Pfuhl : *Masterpieces of Greek Drawing and Painting* (translated by Beazley).
- G. M. A. Richter : *Attic Red-figured Vases*.

Picture-books :—

- F. Gerke : *Griechische Plastik*.
- H. Bulle : *Schöner Mensch*.
- E. Pfuhl : *Malerei und Zeichnung der Griechen*, vol. III.

Section (ii) or (iv) may be offered as part of the examination in *either* Greek or Latin, but not in both.

(Candidates must state when applying for approval of candidature, which option they select.)

Law

[Only one of the three options may be offered. Candidates must state, when applying for approval of candidature, which options they select and which special subject if offering 2 (b)]

1. Constitutional Laws of the British Empire

The nature of constitutional law and constitutional conventions. The legal organization of the British Empire ; the relation between English Constitutional Law and the government of the United Kingdom ; the application of the principles of English Constitutional Law to the relations between the United Kingdom and the Dominions and Colonies and India. The legal and constitutional distinctions between mandated territories, protectorates, Crown colonies and Dominions. Legislative

powers of Dominion and Colonial legislatures in general. Legal and constitutional position of the Governor or Governor-General. Appeals to the Judicial Committee of the Privy Council. The Imperial Conference. The Dominions and foreign relations. The comparative study of the constitutions of the Dominions and India. The Queen and her ministers; the Cabinet system. Parliament, its organization, powers and privileges. The nature of administrative law. The general principles relating to the organization and functioning of public authorities, central and local. The relations between central and local government. The constitutional position of the judges. The general principles governing powers; the royal prerogative; the doctrine of *ultra vires*. The judicial control of public authorities. The prerogative writs. The elements of the law relating to proceedings by and against the Crown, and to proceedings against public authorities and officials.

2. Public International Law

(a) *General Principles*.—The Foundations of International Law. International Personality. State Jurisdiction. Objects of International Law. International Transactions. War and Neutrality.

(b) *Special Subject*.—**Either** the Law of International Institutions **or** Elements of International Economic and Financial Law.

The following books are recommended for the study of Public International Law :—

Text-books :—

Brierly : *The Law of Nations* (4th ed.).

Oppenheim : *International Law* (2 vols., ed. Lauterpacht, 7th ed.).

Schwarzenberger : *Manual of International Law* (3rd ed.).

Schwarzenberger : *International Law as Applied by International Courts and Tribunals*. (2nd ed.).

For further reading :—

Keeton and Schwarzenberger : *Making International Law Work* (2nd ed.).

Smith : *Great Britain and the Law of Nations* (2 vols.).

For reference :—

Briggs : *The Law of Nations* (2nd ed.).

Green : *International Law through the Cases*.

Hall : *International Law* (ed. Higgins, 8th ed.).

Wheaton : *International Law* (ed. Keith, 7th and 8th editions).

3. General Principles of English Private Law

(a) Sources of English Law; statutes and the elementary rules for their interpretation; case law and judicial precedent; custom, general and particular; organization of the Courts of civil jurisdiction in outline.

(b) Elementary principles of contract: history of contract in outline; types of contract, formal and parol contracts; contracts under seal; contract by parol, offer and acceptance; consideration; contracts evidenced in writing; contract void or voidable on the grounds of illegality, fraud, misrepresentation and mistake; performance and discharge of contract; capacity to contract of infants and corporations; special rules relating to mercantile contracts; disclosure and contracts *uberimae fidei*; assignability and negotiability (of negotiable instruments).

(c) Elementary principles of tort: history in outline; general principles of liability; liability of infants, corporations and public authorities; specific torts of trespass to person and false imprisonment,

trespass to land and nuisance, trespass to chattels and conversion, defamation, deceit, inducing a breach of contract and seduction, conspiracy, negligence, liability under the Rule in *Rylands v. Fletcher* for dangerous premises and chattels and for animals.

(d) Land Law : elementary principles of modern law ; nature of estates in land ; the classification of estates in land ; legal estates in fee simple and terms of years (in outline only) ; equitable estates in land and settlements ; equitable estates under a settlement, life estates, entails, estates in expectancy (in outline only) ; concurrent interests in land (in outline only) ; comparison with interests in chattels personal.

(e) The general principles of Equity with special reference to the law of trusts ; outline of the history and nature of equitable jurisdiction ; formation of trusts ; classification of trusts ; rights and duties of trustees ; breach of trust.

(f) Ownership and possession of chattels personal.

The following books are recommended for the study of General Principles of English Private Law :—

(a) (General introduction) Geldart : *Elements of English Law* (ed. Holdsworth).

The relevant parts of :—

(b) Cheshire and Fifoot : *Law of Contract*.

(c) Blackburn and George : *Law of Tort*.

(d) Hargreaves : *Introduction to Principles of Land Law* (2nd ed.).

(e) Keeton : *Law of Trusts and Trustees* (5th ed.).

Logic

1. Deductive Logic

Propositions and propositional forms ; their classification and analysis. The logical relations of propositions. Propositions and judgments. Inference and the conditions of its validity. Syllogism and the logic of classes and relations. The theory of the predicables. Logic, language and symbolism.

2. Inductive Logic

Induction, deduction, and analogy. Scientific induction. The order of nature. Notions of cause. Laws of nature. Experimental methods. The nature and use of hypothesis. Explanation and description. Scientific theory. Methods of investigation. The nature of evidence : probability and certainty. The scope of scientific method.

3. Epistemological Logic

The relation between Logic and Epistemology. Propositions and existents. The “constitutive” and “epistemic” factors in logical theory. The forms of judgment. The relation between affirmation and negation. Categorical and conditional assertion. The modality of judgments and its epistemological significance. The nature of truth ; correspondence, coherence, and self-evidence. Analytic and synthetic judgments. The *a priori* and the *a posteriori*. Knowledge and belief. The problem of error, and the nature of supposal and doubt.

Malay

1. Translation from set texts with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Malay.

3. Grammar. History of British Malaya, 1786–1876.

Marathi

1. Translation from set texts with questions on their language and subject-matter.

2. Translation from unspecified texts. Translation into Marathi.

3. Language, literature and grammar.

An elementary knowledge of Sanskrit will be assumed.

Mathematics (Pure)

The Pure Mathematics of the Intermediate Examination together with the following :—

Section (i)

Determinants of the second and third order. Partial fractions. Summation of easy series. Use of the binomial, exponential, logarithmic, sine and cosine series, absolute convergence and the d'Alembert's ratio test as applied to these series. Hyperbolic functions. Exponential values of sines and cosines. Complex numbers with their representation in a plane. Demoivre's theorem and easy applications.

Section (ii)

The simpler properties of plane figures involving straight lines and conic sections treated by the methods of co-ordinate geometry (excluding the use of homogeneous co-ordinates).

Section (iii)

Simple differentiation and integration of functions of one variable. Maxima and minima of functions of one independent variable. Use of Taylor's and Maclaurin's theorems. The principle of superposition of small errors. Tangents, normals, and curvature of plane curves. Plane areas. Lengths of plane curves. Areas of surfaces of revolution. Volumes of solids of revolution.

Section (iv)

The simple properties of plane figures involving straight lines and conic sections treated by Euclidean methods.

The straight line, the plane, the sphere, the ellipsoid referred to its principal axis.

Ordinary differential equations of the first order.

Linear equations of the first and second orders with constant coefficients. Partial differentiation and simple applications.

(Paper 1 will consist mainly of Algebra, Trigonometry, and Analytical Geometry ; Paper 2 of Analytical Geometry and Calculus.)

The former section D has been abolished.

Mathematics (Applied)

The Applied Mathematics of the Intermediate Examination treated more fully, a knowledge of elementary differential integral calculus being assumed, together with the following :—

Simple parts of uniplanar kinematics.

General dynamical notions.

Motion of a particle under a constant force. Motion of a particle under a central force varying inversely as the square of the distance or as the distance.

Rotation of a rigid body about a fixed axis, and simple cases of uniplanar motion of a rigid body.

Elementary theory of potential.

Common catenary and suspension bridge.

Pressures of liquids on plane areas, pressure of liquids on solid bodies wholly or partially immersed, and conditions of equilibrium of such bodies. Specific gravities and densities of substances, solid and liquid, and methods of determining them. Meta-centre in simple cases.

The elementary methods of graphical statics.

Military Studies

1. General Principles of War.

2. Economic Problems of War.

The Control and use of Manpower, Raw Materials, Shipping. The Planning and Procurement of War Supplies. The Supply and Distribution of Food and Civilian Supplies. War Finance, Prices and Wages Policy. Economic Problems of Occupation.

3. Paper (a) or (b) or (c) :—

(Candidates must state, when applying for approval of candidature, which paper they select.)

Paper (a) will relate mainly to the study of a Campaign (for the set subject, see Appendix).

Paper (b) will relate mainly to the influence of Air Power on Modern Warfare.

Paper (c) will relate to the Applications of Science to Warfare.

The paper will be divided into four sections as below, the candidate to answer questions from *two* sections only.

(Candidates must state, when applying for approval of candidature, which sections they select.)

[*Note.*—It will be assumed that the student's knowledge of the basic sciences of the sections offered is at least of the standard of the General Certificate of Education, Advanced Level, or its equivalent.]

1. *Chemistry.* Chemicals in War: Gas, Smoke, Incendiaries. Explosives and Ammunition. The Petroleum Industry.

2. *Physics.* Theory and use of Optical Instruments in Warfare. Elementary Meteorology. Radio-Location. Telecommunications. Atomic Warfare.

3. *Applied Mechanics.* Ballistics. Applications of the Gyrostat. Reaction of Fluid and Moving Bodies. Elementary Strength of Materials. Theory of Structures. Characteristics and Applications of Engines.

4. *Biology.* Physiology of Nutrition and Respiration. Muscular Work. Reactions to Environment. Elementary Bacteriology. Hygiene.

Music

(Three papers, and an oral test, which cannot be held at a provincial centre.)

1. *General Outlines of Musical History.* Principles of design as illustrated in both vocal and instrumental compositions.

2 and 3. *Harmony and Counterpoint* in not more than four parts, vocal and instrumental.

There will also be an oral examination in general musical knowledge, including elementary Acoustics as affecting musical instruments.

Old Norse

1. Passages for translation, with commentary, from set books.
2. Questions on the literature, language and historical background of Old Norse.
3. Passages for translation, with commentary, from the Poetic Edda.

Norwegian

1. Translation from and into Norwegian. An essay in Norwegian.
2. Set modern texts.
3. Outlines of the history of Norwegian literature. Outlines of Historical Grammar. A knowledge of the Landsmål.

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Pali

1. Translation from specified texts with questions on their language and subject-matter.
2. Translation from unspecified texts. Grammar.
3. Translation into Pali. Literature.

Candidates are required to use Roman script in writing Pali.

Persian (Classical)

1. Translation from set texts with questions on their language and subject-matter.
2. Translation from unspecified texts. Grammar.
3. Translation into Persian. History with reference to the literature and culture, from the Islamic conquest to the death of Nādir Shāh.

History of Philosophy

1. *Greek Philosophy*
From the beginnings to Aristotle.
2. *Modern Rationalistic Philosophy*
From Descartes to Leibniz, with outlines of empiricistic and Kantian criticisms of rationalism, and a short prescribed text.
3. *Modern Empiricistic Philosophy*
From Francis Bacon to Thomas Reid, with outlines of rationalistic and Kantian criticisms of empiricism, and a short prescribed text.

Polish

1. (a) Translation into English, and
either (b) Translation into Polish,
or (c) Composition in Polish (a choice of subject is given).
2. Either (a) Elementary Polish Historical Grammar, and the place of Polish in the Slavonic family.
or (b) A general knowledge of Polish history, with special reference to the period since 1772.

3. **Either** (a) A general knowledge of Polish literature, with special reference to the period since 1772.
or (b) A general knowledge of the economic development of Poland, with special reference to the period since 1815. (For candidates offering Paper 2(b) only.)

There will be an oral examination which will test the candidate's knowledge of the spoken language.

(Candidates must state, when applying for approval of candidature, which options in Papers 1, 2 and 3 they select.)

Portuguese

1. Composition (translation into Portuguese). Translation of unseen Portuguese passages.

2. General study of the literature of the 16th and 17th centuries, with set texts.

3. General study of the literature of the 19th and 20th centuries, with set texts.

One compulsory question in the nature of an essay, to be answered in Portuguese, will be set in each of papers 2 and 3.

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Prehistory of Western Europe

[Two papers and a practical examination.]

A general survey of the prehistory of Western Europe from the end of the Pleistocene period to the beginning of the first century A.D. The main features of the principal post-palaeolithic cultures (Mesolithic, Neolithic, Bronze Age, Early Iron Age) of Western Europe, with special reference to Great Britain. There will be a short practical examination.

Psychology

[Two papers and a practical examination.]

1. *General and Comparative Psychology*

Scope and methods of psychology. The relation of analytical psychology to physiological, pathological, and comparative psychology. The relation of psychical states to physiological processes. Subconsciousness. Unconsciousness. Analysis and classification of mental states. Fundamental processes of mental development; attention, discrimination, assimilation, association, apperception. Sensation and perception. Illusions. Images. Association of ideas and suggestion. Memory. Memory-types. Disturbances of memory. Apprehension of time. Dreams. Hallucinations and hypnotic states. Productive imagination. Early forms of imagination in individual and in race. Exceptional forms of imagination. Abstraction and generalization. Conception. Judgment and reasoning. Thought and language. Aphasia. Idea of self and its variations, normal and abnormal. Belief. Primitive forms of belief. Pleasure and pain. Bodily concomitants of feeling. Emotion and its expression. Classification of emotions. Instinct, imitation, voluntary movement, and habit. Appetite and desire. Higher forms of volition. Normal and abnormal types of volition.

(Candidates are expected to show some knowledge of mental phenomena as displayed in primitive races and in the animal kingdom.)

2. *Experimental Psychology*

Qualities of sensation. Theory of specific nervous energy. Touch; temperature sense; pain. Tastes and smells. Simple and complex

tones ; noises and their analysis ; partial tones, beats, combination tones. Light and colour sense. Movements. Effort, muscular fatigue, sense of weight. Equilibrium and orientation. Intensities of sensation : liminal sensations ; threshold of difference. Weber's Law. Fechner's Laws. The psychophysical methods. Analysis of perception. Localization and projection of impressions. Tactile space ; spatial perception of the blind. Visual space ; binocular vision. Eye movements and accommodation. Perception of form, distance and size. Visual perception of movement. Binaural audition. Localization of sound. Consonance, harmony, tact, rhythm. Illusions. Preperceptions.

Reaction-time, experiments and methods. Simple and complex reaction-times. Subjective estimation of time length and time order. Experimental investigation of recognition, memory, association of ideas, span of apprehension. Fatigue and practice in mental work. Action of drugs on mental processes. The physiological accompaniments of pleasure, pain, the emotions, attention, etc.

3. *Experimental Psychology* : Practical and oral examination

Examination on apparatus and technical methods generally. Examination of an individual on acuity of senses ; colour vision, tone discrimination ; estimation of spatial and temporal magnitudes : reaction-times ; association of ideas ; etc. Examination on the psycho-physical methods and on the treatment of statistics. Examination on the method of carrying out an experimental investigation submitted to the candidate.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away at the close of the examination. These practical note-books must contain a certificate by the teacher, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates are permitted to bring for use in the practical examination note-books containing mathematical formulae.

Roumanian

1. (a) Translation into English, and
either (b) Translation into Roumanian,
or (c) Composition in Roumanian (a choice of subject is given).
2. **Either** (a) Elementary Roumanian historical grammar.
 or (b) A general knowledge of Roumanian history, with
 special reference to the period since 1820.
3. **Either** (a) A general knowledge of Roumanian literature, with
 special reference to the period since 1850.
 or (b) A general knowledge of the economic development
 of Roumania, with special reference to the period
 since 1800. (For candidates offering Paper 2(b)
 only.)

There will be an oral examination which will test the candidate's knowledge of the spoken language.

(Candidates must state, when applying for approval of candidature, which options in Papers 1, 2 and 3 they select.)

Russian

1. (a) Translation into English, and
either (b) Translation into Russian,
or (c) Composition in Russian (a choice of subject is given).

2. **Either** (a) Elementary Russian Historical Grammar, and the place of Russian in the Slavonic family.
or (b) A general knowledge of Russian history, with special reference to the period since 1700.
3. **Either** (a) A general knowledge of Russian literature, with special reference to the period since 1800.
or (b) A general knowledge of the economic development of Russia, with special reference to the period since 1861. (For candidates offering Paper 2(b) only.)

There will be an oral examination which will test the candidate's knowledge of the spoken language.

(Candidates must state, when applying for approval of candidature, which options in Papers 1, 2 and 3 they select.)

Sanskrit

1. Translation from set texts with questions on their language and subject-matter.
2. Translation from unspecified texts. Grammar.
3. Translation into Sanskrit. Literature.

Candidates may use either Nagari or Roman script when answering questions or translating short sentences into Sanskrit, but in translating connected passages the Nagari script must be used.

Scottish Gaelic

1. Composition, unprepared translation, and the grammar of Scottish Gaelic and of early Modern Irish (for the latter the Introduction to Bergin : *Stories from Keating's History of Ireland* will be useful).
2. Prescribed texts (early).
3. Prescribed texts (Scottish Gaelic) and History of Scottish Gaelic literature. In addition, candidates will be expected to have a general knowledge of the history of Irish literature from 1200 to 1600.

The papers on prescribed texts will include questions on their grammar, metre, and literary and social background.

Serbo-Croat and Slovene

(In 1954 only)

1. (a) Translation into English from **either** Serbo-Croat or Slovene.
(b) Translation into and free composition in **either** Serbo-Croat or Slovene.
2. **Either** (a) Elementary Serbo-Croat or Slovene Historical Grammar and the place of the Serbo-Croat and Slovene languages in the Slavonic family.
or (b) A general knowledge of the history of the Serbs, Croats and Slovenes, with special reference to the period since 1800.
3. **Either** (a) A general knowledge of **either** Serbo-Croat or Slovene literature, with special reference to the period since 1800 (including the Ballads).
or (b) A general knowledge of the economic development of the Serbs, Croats and Slovenes, with special reference to the period since 1800. (For candidates offering Paper 2(b) only.)

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Candidates offering Serbo-Croat will be tested in their ability to write both the Latin and the Cyrillic script.

(Candidates must state, when applying for approval of candidature, which options in papers 1, 2 and 3 they select.)

Serbo-Croat

(In and after 1955)

1. (a) Translation into English from Serbo-Croat.
(b) Translation into, and free composition in, Serbo-Croat.
2. **Either** (a) Elementary Serbo-Croat historical grammar and the place of the Serbo-Croat language in the Slavonic family.
or (b) A general knowledge of the history of the Serbs, Croats and Slovenes, with special reference to the period since 1800.
3. **Either** (a) A general knowledge of Serbo-Croat literature, with special reference to the period since 1800 (including the Ballads).
or (b) A general knowledge of the economic development of the Serbs, Croats and Slovenes, with special reference to the period since 1800. (For candidates offering Paper 2 (b) only.)

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Candidates will be tested in their ability to write both the Latin and the Cyrillic script.

Candidates offering Slovene as well as Serbo-Croat may not offer papers 2 (b) and 3 (b) for both languages.

(Candidates must state, when applying for approval of candidature, which options in Papers 2 and 3 they select.)

Sinhalese

(In 1954 only)

1. Translation from set texts with questions on their language and subject-matter.
 2. Translation from unspecified texts. Translation into Sinhalese.
 3. Language, literature and grammar.
- An elementary knowledge of Pali will be assumed.

Slovene

(In and after 1955)

1. (a) Translation into English from Slovene.
(b) Translation into, and free composition in, Slovene.
2. **Either** (a) Elementary Slovene historical grammar and the place of the Slovene language in the Slavonic family.
or (b) A general knowledge of the history of the Serbs, Croats and Slovenes, with special reference to the period since 1800.
3. **Either** (a) A general knowledge of Slovene literature, with special reference to the period since 1800.

- or (b) A general knowledge of the economic development of the Serbs, Croats and Slovenes, with special reference to the period since 1800. (For candidates offering Paper 2 (b) only.)

The examination includes an oral examination which shall test the candidate's knowledge of the spoken language.

Candidates offering Serbo-Croat as well as Slovene may not offer papers 2 (b) and 3 (b) for both languages.

(Candidates must state, when applying for approval of candidature, which options in Papers 2 and 3 they select.)

Spanish

1. Composition (translation into Spanish). Translation of unseen Spanish passages.

2. General study of the literature of the 16th and 17th centuries, with set texts.

3. General study of the literature of the 19th and 20th centuries, with set texts.

One compulsory question in the nature of an essay, to be answered in Spanish, will be set in each of papers 2 and 3.

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Swedish

1. Translation from and into Swedish. An essay in Swedish.

2. Set modern texts.

3. Outlines of the history of Swedish literature. Outlines of Historical Grammar.

There will be an oral examination which will test the candidate's knowledge of the spoken language.

Tamil

1. Translation from set texts with questions on their language and subject-matter.

2. Translation from unspecified texts ; translation into Tamil.

3. Language, literature and grammar.

Telugu

(In 1954 only)

1. Translation from set texts with questions on their language and subject-matter.

2. Translation from unspecified texts ; translation into Telugu.

3. Language, literature and grammar.

Theology

Any three of the following :—

(Candidates must state, when applying for approval of candidature, which options they select.)

(a) *Greek Testament* (one paper).

Grammar of the Greek Testament and unprepared translation.
Set books from the New Testament : Translation, Exegesis and Introduction.

(b) *Church History* (one paper).

Early Church History to A.D. 325.

(c) Philosophy of Religion (one paper).

Purpose and scope of the Philosophy of Religion. The relation of religion to morality, art and science. Theistic and anti-theistic theories, and modes of theistic proof. The relation of God to the world and to man ; the problem of evil. Immortality. Reason and revelation.

(d) Biblical and Historical Theology (one paper).

One of the following subjects, as set in alternate years :—

The Person of Christ

An examination of the Biblical data for a Doctrine of the Person of Christ.

An historical survey of ancient Christologies up to A.D. 451. Modern theories of the Person of Christ.

The Work of Christ

An examination of the Biblical data for a Doctrine of the Work of Christ.

An historical survey of the chief (historical) Soteriological theories. Modern theories of Atonement and Redemption.

Turkish

1. Translation from specified Ottoman and modern texts, with questions on their language and subject-matter.

2. Translation from unspecified Ottoman and modern texts. Translation into modern Turkish.

3. Grammar. Ottoman history and institutions.

Urdu

1. Translation from set texts with questions on their language and subject-matter.

2. Translation from unspecified texts ; translation into Urdu.

3. Language, literature and grammar.

Welsh

1. Welsh Grammar, modern and mediaeval, with a study of the Latin element in Welsh.

2. Composition and unseen translation.

3. History of Welsh literature, 1300-1700, with set texts.

B.A. HONOURS

(In regard to registration, entry, etc., candidates for the Honours Degree must consult the regulations on pages 252-255.)

SCHEME OF EXAMINATION

1. Candidates for the Honours Degree may select any one of the **principal subjects** set out below.

Arabic (Classical)

Architecture

History of Art

Celtic

Central European Regional
Studies

Chinese (Classical)

Chinese (Modern)

Classics

Czech and Slovak Language
and Literature

Dutch

English

French

Geography

German

Greek
 Hebrew
 History
 Hungarian Language and Literature
 Italian
 Japanese (Classical)
 Japanese (Modern)
 Latin
 Malay
 Mathematics
 Pali (with Sanskrit)
 Persian (Classical)
 Philosophy
 Polish Language and Literature
 Portuguese

Psychology
 Russian Language and Literature
 Russian Regional Studies
 Sanskrit
 Scandinavian Languages
 Serbo-Croat and Slovene Language and Literature (in 1954 only)
 Serbo-Croat Language and Literature (in and after 1955)
 Sociology
 South - East European Regional Studies
 Spanish
 Turkish

Candidates offering one of the principal subjects set out in the table below must also satisfy the examiners in a subsidiary subject, unless exempted, and must select as their subsidiary subject **one** of the subjects shown in the table as follows :—

<i>Principal Subject</i>	<i>Subsidiary Subject</i>																				
Celtic French Italian Portuguese Spanish	{ Another language selected from the list of subjects for the B.A. General Degree History of Art Economics Ethics History Logic Military Studies Music History of Philosophy Psychology																				
Czech and Slovak Hungarian Polish Russian Serbo-Croat and Slovene Serbo-Croat Languages and Literatures	{ Another subject selected from the list of subjects for the B.A. General Degree.																				
Geography	{ <table> <tr> <td>Anthropology</td><td>Mathematics</td></tr> <tr> <td>Botany*</td><td>(Pure)</td></tr> <tr> <td></td><td>(Applied)</td></tr> <tr> <td>Economics</td><td>Military Studies</td></tr> <tr> <td>English†</td><td>Physics*</td></tr> <tr> <td>French</td><td>Russian</td></tr> <tr> <td>Geology</td><td>Sociology</td></tr> <tr> <td>German</td><td>Spanish</td></tr> <tr> <td>History</td><td>Statistics†</td></tr> <tr> <td>Italian</td><td>Zoology*</td></tr> </table>	Anthropology	Mathematics	Botany*	(Pure)		(Applied)	Economics	Military Studies	English†	Physics*	French	Russian	Geology	Sociology	German	Spanish	History	Statistics†	Italian	Zoology*
Anthropology	Mathematics																				
Botany*	(Pure)																				
	(Applied)																				
Economics	Military Studies																				
English†	Physics*																				
French	Russian																				
Geology	Sociology																				
German	Spanish																				
History	Statistics†																				
Italian	Zoology*																				

* Subsidiary to Old Regulations only.

† Subsidiary to Revised Regulations only.

In special circumstances other subjects may be approved by the University.

German
Dutch

Another language selected from the list of subjects for the B.A. General Degree except that a candidate is not permitted to offer Afrikaans as a subsidiary subject to the B.A. Honours Examination in Dutch.

History of Art (candidates must take as one of their papers Section B.2, *Architecture in Western Europe from c. 800–c. 1500, including Germany, Italy and Spain*).

Ethics
History
Logic
Music
History of Philosophy
Psychology

Malay

Arabic
Dutch
Sanskrit

Psychology

Anthropology	Mathematics
Aesthetics	(Pure)
Economics	Military
English*	Studies
Ethics	History of
French	Philosophy
German	Physiology
General	Russian
Linguistics	Sociology
Italian	Statistics*
Logic	Theology

* Subsidiary to Revised Regulations only.

In special circumstances other subjects may be approved by the University.

Scandinavian Languages

Afrikaans	Italian
Dutch	Latin
English	Logic
Ethics	Music
French	History of
German	Philosophy
Greek	Portuguese
(Classical)	Psychology
History	Spanish

Sociology

Economics

2. The examination will be conducted mainly by means of printed papers ; but the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

3. A candidate who fails to satisfy the examiners in an Honours B.A. Examination shall in no case be allowed a B.A. General Degree.

4. A candidate who enters for examination in the principal and subsidiary subjects on the same occasion and fails in the subsidiary subject will, if the examiners have recommended him for First or Second Class Honours in the principal subject, be credited provisionally with such Honours and allowed to enter for re-examination in the subsidiary subject alone, on one subsequent occasion only, and within one year from the publication of the Pass List for the examination in question ; if he is then successful, the Degree will be awarded. A candidate who is recommended for Third Class Honours in his principal subject and fails in his subsidiary subject will not be credited with any part of the examination.

5. Failure in the principal subject does not involve re-examination in the subsidiary subject, whether a pass has been obtained in the subsidiary subject earlier than, or on the same occasion as, the examination in the principal subject.

6. The examination in the subsidiary subject may be taken on the same occasion as the Honours Examination, or at any General Examination previously, provided (i) that the Intermediate Examination has already been passed ; (ii) that the candidate has applied for approval of candidature for the examination not later than one month before the last date of entry to the General Examination at which he proposes to present himself.

7. All answers to examination questions shall be written in English unless instructions are given to the contrary.

SUBSIDIARY SUBJECTS : SYLLABUSES

1. In the following subsidiary subjects the examination will consist of the *whole* of the B.A. General Examination in that subject (in subjects where books are set, they will be those for the year in which the subsidiary subject is taken) :—

Anthropology	Any Oriental Language (other
History of Art	than Arabic and Sanskrit as
Irish	subsidiary in and after 1955 to
Mathematics (Pure)	Honours in Malay)
Mathematics (Applied)	Psychology
Military Studies	Scottish Gaelic
Music	Theology
	Welsh

2. In the following subsidiary subjects the examination will consist of the *whole* of the B.Sc. General Examination in that subject :—

Botany	Physiology
Geology	Statistics
Physics	Zoology

Candidates offering Physiology will be required to satisfy the University that their proposed course of study and previous training in the subject are adequate. Each application will be considered on its merits and candidates must submit a certificate of course of study, when applying for approval of candidature.

Candidates who propose to offer the subject Statistics are required to submit a special application giving details of their course of study and training and to obtain the approval of the Council for External Students.

3. In the following subsidiary subjects the examination will consist of certain papers of the B.A. General Examination in that subject, as specified. In subjects where books are set, they will be those for the

year in which the subsidiary subject is taken. Where options are available, candidates must state, when applying for approval of candidature, which option they select :—

Arabic (Subsidiary to Malay) :—Papers 1 and 2 (in and after 1955).

<i>Afrikaans</i>	}	Papers 1, 2 and 3, with the omission of two of the set books, these to be specified by the University, and an oral test.
<i>Danish</i>		
<i>Dutch</i>		

Economics :—Papers 2 and 3.

English :—Paper 1, and either Paper 2 or Paper 3.

Ethics :—Either any two papers of the B.A. General Examination, or two papers on a special syllabus approved by the University at the time of registration.

French :—Paper 1, and either Paper 2 or Paper 3, and an oral test.

German :—Papers 1, 2 and 3, with the omission of two of the set books, these to be specified by the University, and an oral test.

Greek :—Papers 1 and 2, with the omission in Paper 2 of two of the set books, these to be prescribed by the University, and with the addition of an essay question on the set books and a question requiring grammatical comment on passages taken from the set books.

History :—Either two of the papers of the B.A. General Examination, of which one must be chosen from papers (a) to (f), or one of the papers of the B.A. General Examination, and one special paper on the history from 1500 to 1914 of the country whose language the candidate is studying as a principal subject.

Italian :—Paper 1, and either Paper 2 or Paper 3, and an oral test.

Latin :—Papers 1 and 2, with the omission in Paper 2 of two of the set books, these to be prescribed by the University, and with the addition of an essay question on the set books and a question requiring grammatical comment on passages taken from the set books.

Logic :—Either any two papers of the B.A. General Examination, or two papers on a special syllabus approved by the University at the time of registration.

Old Norse :—Papers 1 and 2.

Norwegian :—Papers 1, 2 and 3, with the omission of two of the set books, these to be specified by the University, and an oral test.

History of Philosophy :—Either any two papers of the B.A. General Examination, or two papers on a special syllabus approved by the University at the time of registration.

Portuguese :—Paper 1, and either Paper 2 or Paper 3, and an oral test.

Sanskrit (Subsidiary to Malay) :—Papers 1 and 2 (in and after 1955).

Slavonic and East European Languages (including Modern Greek) :—Paper 1, and Paper 2 (a) or 2 (b) or 3 (a) or 3 (b), and an oral test.

Spanish :—Paper 1, and either Paper 2 or Paper 3, and an oral test.

Swedish :—Papers 1, 2 and 3, with the omission of two of the set books, these to be specified by the University, and an oral test.

4. In *Aesthetics*, *General Linguistics* and *Sociology* the examination will consist of two papers (and, in the case of *General Linguistics*, an oral examination) on the following syllabuses :—

Aesthetics :—

The nature of aesthetic experience ; aesthetic sensibility in Nature and in Art ; distinction between aesthetic experience derived from Nature and from works of art ; the creative experience of the artist. Individual differences in creation of works of art and in aesthetic response. Taste and judgment. Empathy.

The function of medium in art ; diversity of the arts ; art and communication.

Study of theories of art, e.g., Aristotle, Kant, Schopenhauer, Hegel, Croce, the Romantic theory of poetry. (It is not essential for the candidate to be familiar with more than two of these theories.)

Art and Knowledge ; revelation doctrines. Subjective theories of beauty. Function of art in human development. Art and Religion.

Psychoanalytic theories in relation to aesthetic experience and artistic creation.

General Linguistics

- Paper 1. (a) Introduction to the study of general linguistic theory.
(b) The principles of phonetics and phonology (with special reference to English).
(c) Historical linguistics and the comparative method.

- Paper 2. (a) Systems of grammar ; grammatical categories.
(b) Language and dialect. Standards and the individual.
(c) Sociology of language.

Bibliography :—

General : J. Vendryès : *Language* (trans. Radin).

E. Sapir : *Language*.

E. H. Sturtevant : *Introduction to Linguistic Science*.

For paper 1 : (a) F. de Saussure : *Cours de Linguistique Générale*.

(b) Daniel Jones : *Outline of English Phonetics*.

I. C. Ward : *The Phonetics of English*.

J. R. Firth : *Speech*.

(c) A. Meillet : *La Méthode Comparative en Linguistique Historique*.

H. Pedersen : *Linguistic Science in the 19th century*.

L. R. Palmer : *Introduction to Modern Linguistics*.

T. Hudson-Williams : *Introduction to the study of Comparative Grammar*.

For paper 2 : (a) H. Sweet : *New English Grammar*, pages 1–225.

O. Jespersen : *Philosophy of Grammar*.

(b) O. Jespersen : *Mankind, Nation and Individual from a Linguistic Point of View*.

(c) C. K. Ogden and I. A. Richards : *The Meaning of Meaning*, with Supplement I ("The Problem of Meaning in Primitive Languages") by Malinowski.

B. Malinowski : *Coral Gardens and their Magic*, Vol. II, Part IV.

J. R. Firth : *Tongues of Men*.

Sociology :—

Any **two** of the papers set in Option A of the B.A. Honours Degree in Sociology (Revised Regulations).

SUBSIDIARY SUBJECTS : EXEMPTIONS

No exemptions are given at this examination except on the results of examinations of this University, as follows :—

1. Candidates who have obtained the B.A. or B.Sc. Degree either as Internal or as External Students are exempt from examination in a subsidiary subject, provided that a subject in which they have passed is included in the list of subsidiary subjects for the B.A. Honours Examination to which they intend to proceed.

2. Candidates who have obtained the B.D., B.Mus., B.Sc. (Econ.) or B.Com. Degree either as Internal or as External Students are exempt from examination in the subsidiary subjects of Theology, Music or Economics respectively.

3. Candidates who as Internal Students have passed the examination in a subsidiary subject in accordance with the conditions, with regard to syllabus and otherwise, that were then in force for External Students, may be credited with that subsidiary subject for the purpose of an External Degree (and similarly for candidates who as External Students passed the examination in a subsidiary subject and are proceeding to the B.A. Honours Degree as Internal Students).

4. Candidates who, while failing in the examination as a whole, have satisfied the examiners in two subjects at the B.A. or B.Sc. General Examination, may apply for exemption from examination in a subsidiary subject, provided that a subject in which they have so passed is included in the list of subsidiary subjects for the B.A. Honours Examination to which they intend to proceed. All such applications will be considered individually on their merits.

SYLLABUSES FOR B.A. HONOURS EXAMINATION

(A list of all the set books and special subjects will be found in the Appendix to these regulations.)

Arabic (Classical)

Nine papers will be set, with an additional optional paper.

1-3. Translation from specified texts, with questions on their language and subject-matter.

4. (a) Translation from specified texts, with questions on their language and subject-matter. **In 1954 only** this paper will contain questions on Grammar and the technical terms of Arabic Grammar ;

or (b) Arabic Palaeography, Epigraphy and Numismatics ;

or (c) The Theory and History of Islamic Law ;

or (d) Translation from set South Arabian inscriptions.

5. Translation from unspecified texts.

6. Translation into Arabic.

7. **In 1954 only.** Arabic Literature ; **in and after 1955,** Arabic Grammar and Literature.

8. **Either** the Historical Development of Islam,
or the Grammar of the South Semitic Inscriptions.
 (The following books are recommended for study :—
 C. Brockelmann : *Grundriss der vergleichenden Grammatik der Semitischen Sprachen*, Band I (Berlin, 1908-13) ; M. Höfner : *Altsüdarabische Grammatik* (Leipzig, 1943).)
9. (i) The History of the Caliphate to 1258.
 (ii) Mediaeval Islamic Institutions.
 (iii) The History of Political Ideas.
10. An additional optional paper in
or (a) Islamic Art and Archaeology;
 (b) Translation from specified Hebrew and Aramaic texts, with questions on their language and subject-matter.
or (c) Translation from specified Persian texts.
or (d) Translation from specified Turkish texts.
or (e) Law of Personal Status. Candidates must study at least **two** of the following Schools of Law :—
 (a) the Hanafis,
 (b) the Malikis,
 (c) the Shafi'is,
 (d) the Ithna' Asharis.

In special circumstances permission to offer another School in place of **one** of these may be granted on application.

[A special note will be placed against the names of the successful candidates who have satisfied the examiners in the optional paper.]

(Candidates must state, when applying for approval of candidature, which options in Papers 4, 8 and 10 they select.)

Architecture

The regulations and syllabuses are published in a separate pamphlet which may be obtained on application to the External Registrar.

History of Art

Candidates who wish to offer this subject must obtain special permission to do so from the University when applying for registration, and must produce satisfactory evidence of their facilities for study. Such permission will not normally be granted to candidates unless they obtain a pass at an approved level in History of Art at the Intermediate Examination in Arts or its equivalent. Candidates will not normally be allowed to take the Final Examination less than three years from the approval of their application for candidature.

Candidates are also required to have passed in a modern language other than English at the Intermediate Examination in Arts or its equivalent.

The examination will consist of nine papers and an oral examination, as follows :—

1-2. History of Art in the Renaissance, c. 1300-c. 1600.

Particular attention should be paid to the history of Art in Italy throughout the period and in Northern Europe during the 15th and 16th centuries.

3. Renaissance : a critical study of set texts.

- 4-5. The History of Art in England,
either (a) up to c. 1550,
or (b) from c. 1550.

6. A paper in which candidates will be required to discuss works of art of which photographs are provided. The material will be taken from the Renaissance and the two English papers as defined above.

7, 8, 9. **One** of the following special periods in the History of Art in Western Europe :—

- (a) Byzantine, c. 400 to c. 1400.
- (b) Carolingian and Romanesque, c. 800 to c. 1200.
- (c) Gothic, c. 1100 to c. 1500.
- (d) 17th century.
- (e) c. 1700–c. 1830.
- (f) c. 1830 to the present day.

Candidates will be expected to show a knowledge of the principal schools of Painting, Architecture, Sculpture and the Applied Arts in the periods with which they are concerned. They will also be expected to show some knowledge of :—(a) Iconography ; (b) The history of Costume ; (c) Technical methods ; (d) The history of Art Criticism.

Paper 9 in the examination will consist of questions on the general historical background of both the Renaissance and the Special Period chosen. Emphasis will be placed on social and cultural rather than on political history.

Candidates must have a reading knowledge of at least two modern languages, other than their own, of value for the study of the history of art.

(Candidates must state, when applying for approval of candidature, which options under Papers 4-5 and which period under Papers 7, 8, 9 they select.)

Celtic

One of the following sections (A) or (B) :—

(Candidates must state, when applying for approval of candidature, which section and, if offering section (B), which options under (b) and (c) they select.)

In each section five papers will be set.

A.—*Welsh*

- (a) Historical Welsh grammar with the principles of Celtic Philology.
- (b) Translation of unprepared passages from Old and Mediaeval Welsh.
- (c) A Welsh essay on some subject within the scope of the examination.
- (d) History of Welsh literature.
- (e) Study of set works in Old and Mediaeval Welsh.
- (f) An oral examination to test the candidate's scholarship as well as his command of the spoken language.

B.—*Irish and Scottish Gaelic*

- (a) Historical Irish grammar with the principles of Celtic Philology (one paper).
- (b) The history of Old and Mediaeval Irish literature, and of **either** Modern Irish **or** Scottish Gaelic literature, with translation of unprepared passages from Old and Mediaeval Irish (one paper).

- (c) An Irish or Scottish Gaelic essay on some subject within the scope of the examination (one paper).
- (d) Set books, including questions on their grammar, metre and literary background (two papers).
- (e) An oral examination to test the candidate's scholarship as well as his command of **either** spoken Irish **or** spoken Scottish Gaelic.

Central European Regional Studies

Each application for permission to offer this subject will be considered individually, and candidates must submit, when applying for registration, a detailed statement of their previous studies in Economics, European History and the language(s) of the region (a knowledge of all three subjects up to the standard of the Intermediate Arts Examination will normally be expected), and must produce satisfactory evidence of their facilities for study. It is essential for the candidate to have a good knowledge of the geography of the region.

Candidates will not normally be allowed to take the Final Examination less than three years from the approval of their application for candidature.

- (1) Translation from and composition in either Czech, or Hungarian, or Polish, or Slovak.
- (2) The history of the literature of the country selected for Paper (6).
- (3) **One** of the following periods of European History :—
 - (a) from A.D. 400 to 1200,
 - or** (b) from A.D. 1200 to 1500,
 - or** (c) from 1500 to the middle of the 18th century,
 - or** (d) from the middle of the 18th century to the present day.
- (4) and (5) The history of Central Europe, including its economic history (two papers).
- (6) The history of the Czechoslovak lands, **or** of Hungary, **or** of Poland.
- (7) Modern economic structure and institutions, with special reference to Central Europe.
- (8) The history of Political Ideas.
- (9) and (10) Special subject (two papers) (for details of books and authorities see Appendix) :—
 - (a) The Reform movement in Bohemia, 1346–1415.
 - or** (b) Hungary, 1382–1526,
 - or** (c) Poland, 1733–1795,
 - or** (d) the land question in Central Europe since 1918.

An oral examination which will test the candidate's ability to speak Czech, Hungarian, Polish or Slovak, as well as his knowledge of Central Europe.

(Candidates must state, when applying for approval of candidature, which subjects and options in Papers 1, 3, 6, 9 and 10 they select.)

Chinese (Classical)

Eight papers will be set.

- 1–3. Translation from specified texts with questions on their language, literary form and subject-matter.

4. **Either** (a) Translation from specified texts with questions on their language, literary form and subject-matter ;
or (b) Translation and romanization of passages from specified and unspecified Chinese texts according to the traditional Japanese reading, with questions on the principles of this reading and on the grammar of classical literary Japanese.
 5. Translation from unspecified texts.
 6. Translation into Chinese ("National Language" (Kuo Yü) will be accepted as an alternative to "Literary Style").
 7. **Either** (a) Questions on a prescribed period of Chinese History,
or (b) Translation from unspecified Japanese texts.
 8. History of Chinese Literature (excluding works written in spoken style—*pai-hua* (*bairhuah*).)
- (Candidates must state, when applying for approval of candidature, which options in papers 4 and 7 they select.)

Chinese (Modern)

Eight papers will be set.

- 1-3. Translation from specified texts, with questions on their language, literary form and subject-matter.
4. Translation from unspecified texts—I (modern novels, etc.).
5. Translation from unspecified texts—II (**either** Newspapers or Essays in both classical and modern styles).
6. **Either** Translation into Chinese and free composition or (for candidates who choose alternative specified texts in the classical style) translation only.
7. **Either** History of China since 1834 or History of the T'ang Dynasty, or Translation from unspecified Japanese texts.
8. History of Chinese literature.

There will be an oral examination conducted partly in the language and partly in English which will test scholarship as well as command of the spoken language. Cantonese will be accepted as an alternative to National Language. Candidates must state, when making entry to the examination, which form of the language they will offer.

(Candidates must state, when applying for approval of candidature, which options in papers 5, 6 and 7 they select.)

Classics

All candidates will be required to have satisfied the examiners, not later than the November preceding the date of their Final Examination, in the following papers of the Intermediate Examination in Arts :—

Ancient History : Paper (2) Greek History from 776 B.C. to 146 B.C.
and Paper (3) Roman History from 753 B.C. to A.D. 337.

Candidates who have not passed in Ancient History at Intermediate Arts, or in papers (a) and (b) in History at B.A. General and who qualify by taking the relevant papers in Ancient History as a supplementary subject at a subsequent Intermediate Examination in Arts will not be required to pay an additional entry fee. Candidates for re-examination in Ancient History at the Intermediate Examination will be required to pay a fee of £2 2s.

(Candidates must state, when applying for approval of candidature, which sections and options in Papers 7-8, 10 and 11 they select.)

Eleven papers of three hours each, as follows :—

1. Translation into Latin prose.
2. Translation into Greek prose.
- 3-6. Unseen translation, Greek and Latin in equal proportion (4 papers).
- 7-8. Set texts. One of the sections under *A. Latin Books* and one of the sections under *B. Greek Books* selected from the prescribed list (see Appendix). Candidates will be required to translate, to write an essay and to explain points of grammar, subject-matter and allusions ; and to comment on points of textual criticism in so far as they are of importance to the interpretation.
9. Grammar and Literature, consisting of (i) passages for grammatical comment, and general questions on grammar and metre ; (ii) questions on Greek and Latin Literature. There will be one compulsory question, giving a choice of passages for grammatical comment. Sufficient options will be given throughout the paper to afford opportunities to candidates who specialize on the Greek or the Latin side.
10. A Special Subject to be selected from the following list :—
 - (a) Translation into Greek verse.
 - (b) Translation into Latin verse.
 - (c) (i) The Comparative Philology of the Greek and Latin Languages with special reference to Greek.
(ii) The Comparative Philology of the Greek and Latin Languages with special reference to Latin.
Passages for translation and linguistic comment will be set (see Appendix).
Except with the special permission of the University, no candidate may offer both subjects (c) (i) and (c) (ii).
 - (d) History of Greek Drama, with a knowledge of Aristotle's *Poetics*.
 - (e) Satire in Latin Prose and Poetry.
 - (f) History of Greek Philosophy to Aristotle (inclusive).
 - (g) Stoicism and Epicureanism in Roman Life and Thought.
 - (h) A Greek Historical subject (see Appendix).
 - (i) A Roman Historical subject (see Appendix).
 - (j) Greek Sculpture, pottery and vase painting from 800 to 350 B.C.
 - (k) History and Archaeology of Roman Britain.
 - (l) Civilization in Greece from 2000 to 600 B.C.—the archaeological material.

(Note.—If a candidate so desire, he may offer (a) or (b) or both (a) and (b) as additional Special Subjects.)

11. **Either** A paper in two sections, (i) Greek and Roman Religion, and (ii) Greek and Roman Political Ideas.

Candidates will be required to show knowledge of both sections, but opportunity will be given them to display a special

interest in either section. The following reading list is intended to indicate the scope of the paper; the books are not prescribed:—

A. Greek and Roman Religion.

1. Greek

- *Adams : *The Religious Teachers of Greece.*
- E. Bevan : *Later Greek Religion.*
- *F. M. Cornford : *Greek Religious Thought.*
- W. K. C. Guthrie : *The Greeks and Their Gods.*
- G. Murray : *Five Stages of Greek Religion.*
- *M. Nilsson : *A History of Greek Religion.*
- H. J. Rose : *Ancient Greek Religion.*

2. Roman

- C. Bailey : *Phases in the Religion of Ancient Rome.*
- *W. Warde Fowler : *The Religious Experience of the Roman People.*
- *W. R. Halliday : *Lectures on the History of Roman Religion.*
- W. R. Halliday : *The Pagan Background of Early Christianity.*
- H. J. Rose : *Ancient Roman Religion.*

(Books marked * are to be regarded as basic.)

B. Greek and Roman Political Ideas.

- *E. Barker : *Greek Political Theory.*
 - *E. Barker : *The Politics of Aristotle.*
 - *Cicero : *De Republica.*
 - (G. H. Sabine & S. B. Smith : *Cicero's On the Commonwealth* is recommended.)
 - J. L. Myres : *The Political Ideas of the Greeks.*
 - W. K. Prentice : *The Greek Political Experience.*
- (Books marked * are to be regarded as basic.)

Candidates who have obtained the B.A. Honours Degree in Greek or Latin, offering this option, will not be permitted to offer it again.

or A second Special Subject to be selected from the list given above under 10.

Candidates will not be permitted to offer a Special Subject taken in a previous Honours examination.

The Arthur Platt Studentship in Classics

The Arthur Platt Studentship in Classics, a postgraduate award of the value of £150 tenable for one year, is offered to candidates at the B.A. Honours Examination.

For full particulars see the Scholarships Pamphlet.

Czech and Slovak Language and Literature

In the translation and essay papers candidates must use either Czech or Slovak consistently.

In 1954 only.

(1) Translation from Czech and Slovak ; translation into Czech or Slovak.

(2) Essay in Czech or Slovak.

(3) History of the Czech and Slovak languages.

(4) General history of Czech and Slovak literature.

(5) **One** of the following special periods of Czech and Slovak literature :—

(a) The old Czechoslovak literature from the beginning to the middle of the 18th century.

(b) From the National Resurrection (middle of the 18th century).

(c) Modern Slovak Literature.

(6) Essay in English.

(7) **Either** Comparative Slavonic Philology with Phonetics, or History of Czechoslovak literary criticism.

(8) An oral examination, partly conducted in Czech or Slovak, which will test scholarship as well as command of the spoken language.

(Candidates must state, when applying for approval of candidature, which options and periods in Papers 5 and 7 they select.)

For examinations in and after 1955

(1) Translation from Czech and Slovak.

(2) Translation into Czech or Slovak.

(3) Essay in Czech or Slovak.

(4) History of the Czech and Slovak languages.

(5) History of Czech and Slovak literature to 1848 with prescribed texts.

(6) History of Czech and Slovak literature from 1848.

(7) and (8) **Either** (a) a special subject in Czech and Slovak literature, or (b) Comparative Slavonic Philology, with Phonetics.

(9) An oral examination partly conducted in Czech or Slovak, which shall test scholarship as well as command of the spoken language.

(Candidates must state, when applying for approval of candidature, which option in Papers 7 and 8 they select.)

Dutch

Seven papers will be set.

(a) Germanic Philology, with special reference to the position of Dutch in the Germanic languages : Old English or Old High German or Old Saxon together with Old Low Franconian.

(Candidates must state, when applying for approval of candidature, which option they select.)

(b) A study of the development of the Dutch language. Candidates will be required to be familiar with :—

(i) The language at the Middle Dutch stage, taking West Flemish as a basis.

(ii) The development of Middle Dutch into Early Modern Dutch.

(iii) The rise and development of Modern Standard Dutch, illustrated by the usage of authors from the 16th to the 19th century.

(c) Prescribed and unprescribed Middle Dutch texts, and Middle Dutch literature.

- (d) Dutch literature from 1500.
- (e) Prescribed modern texts.
- (f) Translation from and into Dutch.
- (g) Essay in Dutch.
- (h) An oral examination which will test scholarship as well as command of the spoken language.

In those parts of the examination in which candidates are required to write in Dutch, they will be expected to conform to present-day official usage in respect of orthography and grammar.

English

All candidates will be required to take the eight papers (a) to (h) below, except that candidates will be permitted to offer paper (i), Principles of Literary Criticism in place of paper (a), History of the Language, or paper (j), Old Icelandic, in place of paper (f), History of English Literature 1700-1880. **They must state, when applying for approval of candidature, which options they select.**

Candidates who offer paper (i) will be required in papers (b) and (c) to show a sound knowledge of grammar, prosody, and, where applicable, of textual emendation, and in general of whatever is necessary for the understanding of the texts ; but these papers will, by reasonable choice of questions, be adapted to the differing studies of those who offer paper (a) and those who offer paper (i).

(a) History of the Language.

The main outlines of the history of English from the beginning of the Old English period to the present day : orthography, pronunciation, grammar and syntax, vocabulary, meanings, word-formation, loan-words. In the Old and Middle English periods, candidates should base their study of the language on the texts set for this paper.

The study of Standard Modern English (spoken and written) is further defined under the following aspects :—(i) the pronunciation of modern spoken English ; (ii) the intonation of spoken English ; (iii) the grammar of literary and spoken English ; (iv) the syntax of modern English ; (v) dictionaries and words ; (vi) loan-words and loan-word formations.

The following books are recommended for reference :—

- (i) Ida Ward : *The Phonetics of English*.
- (ii) Daniel Jones : *An Outline of English Phonetics* (the section on Intonation only).
- (iii) Henry Sweet : *A New English Grammar*.
Harold Palmer : *A Grammar of Spoken English*.
- (iv) Henry Sweet : *A New English Grammar*, vol. II.
- (v) Preface to Johnson's Dictionary.
Introduction to Volumes of the Oxford New English Dictionary, especially Vols. A, B, S and supplements to N.E.D.
- (vi) A. C. Baugh : *History of the English Language*.
M. S. Serjeantson : *History of Foreign Loan Words in English*.

The paper will include a compulsory section consisting of passages from the set texts and some unseen passages, including one from earlier ME and one (compulsory) from current English.

(b) Old English Texts.

- (i) Prescribed texts ; translation.
- (ii) Commentary and questions on subject-matter, interpretations, forms (including metre), expression.
- (iii) Compulsory unseen translation.

(c) Middle English Texts.

- (i) Prescribed texts ; translation.
- (ii) Commentary and questions on subject-matter, interpretation, forms (including metre), expression.
- (iii) Compulsory unseen translation.

(d) History of English Literature to 1475 and the Scottish Chaucerians.**(e) History of English Literature, 1475-1700.****(f) History of English Literature, 1700-1880.**

(Books are not set for papers (d), (e), and (f), but candidates are not expected to cover the whole field with equal emphasis. A wide range of questions will be set in each paper on the principal authors, movements and influences.)

(g) Shakespeare (with five or six plays to be specially studied).**(h) Special Subject (see below).****(i) Principles of Literary Criticism (to be taken only as an alternative to paper (a). Syllabus as for Special Subject below).****(j) Old Icelandic, with set texts (to be taken only as an alternative to paper (f). Syllabus as for Special Subject below).***Special Subjects***Introduction to Palaeography.**

Candidates will be tested upon (i) their ability to transcribe reproductions of specimens of handwriting in England from the earliest times to 1650 ; (ii) their knowledge of the forms of letters, abbreviations and punctuation in all the periods covered by (i) above ; and (iii) their knowledge of the making of a manuscript book, important manuscripts of the Old English, Middle English and Elizabethan periods, and the bearing of palaeography on editorial method, textual study and the study of archives.

Introduction to Bibliography.

An introduction to the principles of bibliography with special reference to printing, book production, and the book trade in England and the bearing of these upon problems of textual criticism and literary history.

Principles of Literary Criticism.

The scope of the paper is indicated by the following books. Questions will be set on some or all of the books, but will not be restricted to them:—

Aristotle : *Poetics* ; Horace : *Ars Poetica* ; Longinus : *On the Sublime* ; Sidney : *Apologie for Poetrie* ; Dryden : *Essays* (ed. W. P. Ker, 2 vols.) ; Boileau : *L'Art Poétique* ; Pope : *Essay on Criticism* ; Burke : *Essay on the Sublime and Beautiful* ; Johnson : *Lives of the Poets* (Cowley, Milton, Dryden, Pope, Gray) ; Lessing : *Laocoön* ; Wordsworth : *Prefaces and Supplementary Essays* ; Coleridge : *Biographia Literaria* ; Arnold : *Essays in Criticism* (First and Second Series) and *Preface to Poems*, 1853 ; Pater : *Appreciations and The*

Renaissance ; Sainte-Beuve : “ *Qu'est que c'est qu'un Classique* ” and *Taine* ; T. S. Eliot : *Selected Essays*.

Candidates may read in translation such of these books as are not in English.

Questions will be included on critical method as well as on principles.

Candidates should be prepared to show how creative writing at different periods was influenced by current critical theory.

This special subject may not be offered by a candidate who offers Paper (i).

The Development of the Drama and Theatre in Europe and America from 1850 to the present day.

(a) The most important general movements.

(b) The work of some particular playwright or playwrights to be set from year to year.

English Literature from 1880 to the present day.

(a) The most important developments in poetry and prose, including the literary drama.

(b) Specified authors.

The paper will include questions upon some or all of the following authors, but questions will not be restricted to these authors :—

Thomas Hardy, Henry James, Joseph Conrad, Oscar Wilde, W. B. Yeats, G. Bernard Shaw, E. M. Forster, D. H. Lawrence, Virginia Woolf, T. S. Eliot.

American Literature.

A survey of American Literature from 1776 to the present day, with a special study of certain prescribed authors.

Phonetics.

The examination will consist of a paper on phonetic theory and its place in general linguistics (3 hours), an English phonetic dictation ($\frac{1}{2}$ hour) and an oral test ($\frac{1}{4}$ hour for each candidate). The theory required includes the mechanism of utterance, the analysis of English and important non-English speech sounds, the use of sounds in connected speech, processes of sound change, practical applications of phonetics. The relation of phonetics to phonology and general linguistics, with special reference to the comparative method as applied to the Germanic languages. The paper will also contain a passage of English to be transcribed phonetically. In the phonetic dictation test candidates will be required to transcribe phonetically the pronunciation of the examiner. In the oral test candidates may be required to read aloud an unseen passage of English phonetic transcription and must answer questions on elementary phonetic theory and its practical application.

The following books are recommended for reference :—

F. de Saussure : *Cours de linguistique générale*.

A. Meillet : *La Méthode Comparative en Linguistique Historique*.

Old English in relation to Gothic and other Germanic languages.

Candidates will be expected to show a knowledge of Old English and Gothic, and at least *one* of the following : Old Norse, Old Saxon, Old Frisian, Old High German. The paper will include a compulsory section consisting of passages from set texts for comment, and in addition translation and comment from set Gothic texts. There will be general questions covering the principal Germanic sound changes, changes at

work in the grammatical system (excluding the detailed history of inflexional endings), word formation, changes of meaning, and loan-words.

Old Icelandic, with set texts.

The subject will include the cultural and literary, as well as the linguistic features of the texts studied.

(This special subject may not be offered by a candidate who offers Paper (j)).

Old Saxon and Old High German, with set texts.

This subject will include the cultural, literary, and linguistic features of the texts studied.

The Classical Background to English Literature.

- (a) **Two** of the more important classical forms in their relation to English Literature, as set.
- (b) Set texts, of which set portions must be read in the original Latin or Greek. Candidates must select one set text from each section, and in each section may select a Latin or Greek text. **They must state, when applying for approval of candidature, which texts they select.**

Anglo-Saxon Archaeology.

A study of the main archaeological problems of the Anglo-Saxon settlement, the evolution of Anglo-Saxon art, and the study of archaeological remains bearing upon Anglo-Saxon literature.

The following scheme indicates the ground to be covered, but candidates may emphasize one or other of the two main sections of the subject :—

(i) **Heathen Period :—**

- (a) General characteristics of metal ornaments, weapons and pottery of the period ; cemeteries and funeral practices, dwelling sites.
- (b) Continental and Scandinavian connections (general outlines only) ; imported objects.
- (c) Literary evidences.
- (d) Evidence of Place-names.
- (e) The Roman heritage : towns, villages, roads, agriculture, horticulture, ornaments, etc.
- (f) Problems of the Invasion and subsequent settlements.

(ii) **Christian Period :—**

- (a) Early period, from the Conversion to Christianity to the end of Alfred the Great. Surviving monuments and art objects : architecture (ecclesiastic), sculpture (stone), painting (MSS.), metal-work, ornaments and weapons, coins, ivory. Runic inscriptions.
- (b) Late period, from Alfred the Great to the Norman Conquest. General characteristics of civilization : towns (especially London), villages, houses, ecclesiastical sites, monastic life, agriculture, trade, ships, fortifications (only a general knowledge and some acquaintance with the outstanding examples will be expected).

The following books are recommended for reference :—

- G. Baldwin Brown : *The Arts in Early England*.
 E. T. Leeds : *Archaeology of the Anglo-Saxon Settlements*.
 E. T. Leeds : *Anglo-Saxon Art and Archaeology*.
The Ordnance Survey Map of Britain in the Dark Ages.
 R. G. Collingwood and J. N. L. Myres : *The Oxford History of England*, Vol. I.
 N. Åberg : *Anglo-Saxon in England*.
 R. E. M. Wheeler : *London and the Saxons*.
 H. Shetelig and H. Falk (trans. E. V. Gordon) : *Scandinavian Archaeology*.
 A. W. Clapham : *English Romanesque Architecture before the Conquest*.
 W. G. Collingwood : *Northumbrian Crosses*.
 J. Brønsted : *Early English Ornament*.
 R. H. Hodgkin : *History of the Anglo-Saxons*.
British Museum Guides to Anglo-Saxon Antiquities.
Publications of the Place-Name Society, especially Vol. I.

French

(Candidates must state, when applying for approval of candidature, which options and subject under (4) they select.)

There will be eight papers and an oral examination.

- (1) (a) History of the French language to the present day, including Vulgar Latin, Historical Phonetics, Morphology, Syntax, Vocabulary and Semantics. Candidates should have some knowledge of the whole field and of the main principles of General Linguistics, but will not be required to show a specialized knowledge of all branches of the subject. Those who choose questions on Historical Phonetics are recommended to make use of a recognized system of phonetic symbols. Candidates will have an opportunity of showing a linguistic knowledge of the set texts of the mediaeval and Renaissance periods. Three questions must be answered from this part of the paper.
- (b) Unseen translation from Old French into English.
- (2) Mediaeval and Renaissance Literature with set texts before 1600.
- (3) Modern Literature from 1600.
 (For the examination in 1954 this paper may be answered in French or in English. For examinations **in and after** 1955 this paper must be answered in French.)
- (4) A Special Subject in Romance Philology or French Literature, with prescribed books or authors.
- (5) Translation from English into French.
- (6) Translation from French into English.
- (7) Essay in French.
- (8) Commentary on unseen texts. Alternative passages will be set from Old, Middle and Modern French, and the commentary may be literary or philological at the choice of the candidates ; except that candidates offering the Special Subject in Romance Philology or in Mediaeval or Renaissance literature must restrict their choice to a passage of Modern French (seventeenth-century to the present day).
 (For the examination in 1954 this paper may be answered in French or in English. For examinations **in and after** 1955 this paper must be answered in French.)

An oral examination to test the candidate's scholarship as well as his command of the spoken language.

Geography

(Old Regulations—for examination in 1954 and 1955 only.)

The examination will consist of nine written papers including one on map work, and the inspection by the examiners of the original note-books and any other evidence of his practical work in the field that the candidate may wish to submit.

1. General Regional Geography (five papers) :—

(i) The British Isles ; (ii) France or Germany ; (iii) Europe without detailed reference to British Isles or to the country selected under (ii) ; (iv) **Either** North America or Asia ; (v) The remaining Continents.

2. Physical Basis of Geography (one paper).

3. Map work (one paper).

4. **Two** of the following subjects (one paper in each) :—

(a) Cartography.

(b) Geomorphology.

(c) Climatology and Oceanography.

(d) Distribution and Ecology of Plants and Animals.

(e) Distribution of Man.

(f) Economic Geography.

(g) The Political Geography of the Modern World.

(h) Historical Geography.

(i) History of Geographical Knowledge.

Questions will be set involving (i) translation of passages in French and German, and (ii) answers with regard to their subject-matter. A candidate will be required to answer that question which is in agreement with his choice of a special region (France or Germany). Without answering this question a candidate cannot make up the full number of questions to be answered.

Candidates are required to submit their original note-books and other evidence of work in the field. Candidates will be instructed on the examination programme sent with their entry-form as to the time and place for delivery of their note-books and field work.

(Candidates must state, when applying for approval of candidature, which options under 1 and which subjects under 4 they select. Candidates offering 4 (f) (h) and (i) must also state their optional sections.)

SYLLABUSES

1. General Regional Geography

The present conditions, the inter-relations and the evolution of the various physical, human and other biological elements in the geography of each area. A synthetic study of the natural regions and their subdivisions, with an examination of their characteristics and an evaluation of the relative influence of their component elements.

In the paper on the British Isles, applications of practical methods to regional work will be demanded. Candidates may be required (a) to interpret and to discuss the value and use of the various maps, e.g.,

those issued by the Ordnance Survey, (b) to interpret geological maps, to draw sections across these, and to examine the influence of the geological structure upon other geographical conditions, (c) to interpret, and to construct from data supplied, weather and climate charts and graphs, and to relate the facts indicated to such matters as relief, economic activities, etc., (d) to make and to discuss maps and other graphic means of indicating human conditions, e.g., agricultural production, pastoral work, mining, communications, and distribution of population.

In the paper on the country selected under (ii) candidates will be expected to show a knowledge of some of the principal regional studies in the language of the country selected, and to translate and comment upon passages from such works. Application of practical methods as indicated in connection with the paper on the British Isles may be demanded, and familiarity with the topographical maps issued by the Government of the country will be assumed.

2. Physical Basis of Geography

A broad knowledge of the physical geography of the world to serve as a basis for the study of regional geography.

The Earth as a Planet.—Its movements and relation to the Sun ; the consequent distribution and seasonal variation of insolation over the earth's surface.

The Atmosphere.—Distribution and periodic variation of the pressure and temperature of the air, of air movements and wind systems, of humidity and precipitation ; climate types and regions.

The Oceans.—Form of sea- and ocean-beds. Temperature and salinity of oceans and seas ; wave and tidal movements and their effects ; ocean circulation, its origin and effects.

The Lands.—General classification of the materials of the earth's crust—sedimentary, igneous, and metamorphic rocks ; crustal movements—folding and faulting isostasy ; processes of denudation and deposition ; chief effects of glaciation ; typical land-forms ; soils ; physical controls of water supply.

3. Map Work

The study and interpretation of topographical maps of the principal countries. Methods of showing relief and other features. Scales and their transformations.

Simple methods of survey, including the use of the chain, the plane-table, prismatic compass, clinometer, and theodolite.

The collection of data relating to climatic, economic and population conditions and cartographical and diagrammatic methods of expression of such data.

The principles of the following map projections, namely :—Conical with one or two standard parallels, Bonne, polyconic, international, conical equal area and conical orthomorphic ; sinusoidal, Mollweide, Mercator ; zenithal equidistant, zenithal equal area, and zenithal orthomorphic or stereographic.

Candidates are expected to know the principle underlying each projection, its defects, and its suitability for particular purposes or areas. They should be able to construct any projection by simple graphical methods where possible or by simple tables, and they should be able to identify each projection so far as possible by inspection or rough measurement.

4(a). Cartography

Methods of Trigonometrical Surveying including Triangulation, Resection, and Traversing. Photographic Surveying. Heights by Levelling and by Aneroid Barometer. The use of the Sextant.

Time—mean, apparent and sidereal. International Date Line. Determination of Latitude, Longitude and Azimuth by simple astronomical observations. The elements of Spherical Trigonometry so far as is required for the above. Differences of Latitude, Longitude and Reverse Azimuths. Calculation of the times of Sunrise and Sunset.

Historical statement of the more important efforts to determine the figure of the Earth with the results arrived at and the principles of the methods.

A further study of the Map Projections included in the obligatory subject "Map Work" together with Cassini's Traverse Mercator, Gnomonic, Aitoff's, Transverse and Oblique Zenithal Projections. The effect of the spheroidal shape of the Earth on Map Projections in simple cases.

(A knowledge of elementary plane trigonometry will be assumed.)

4(b). Geomorphology

The Earth : its nature and physical state, with the evidence bearing thereon.

The major relief features of the lithosphere : their origin, development and distribution.

Land Forms : the study of their characteristics and origin, with special reference to definite areas. A knowledge of the leading type areas will be assumed. In answering, candidates will be expected to substantiate their general statement by examples drawn from areas which they have specifically studied.

4(c). Climatology and Oceanography

A study of the atmosphere and hydrosphere, including a more detailed knowledge of the matter specified in the syllabus on the Physical Basis of Geography (sections on the Atmosphere and the Oceans).

The construction and use of the chief meteorological instruments.

The thermal structure of the atmosphere and the principles of its circulation.

Classification of climates. Climatic control of soil-types and of the régime of rivers. Periodic and secular variations of climate.

The history and methods of oceanographical survey. Marine deposits.

Physical properties of ocean waters and their circulation. Composition of river, lake and ocean waters. The characteristics and causation of the tides.

4(d). Distribution and Ecology of Plants and Animals

I. Distribution and Ecology of Plants :—

The habitat factors : climatic, topographic, edaphic and biotic (including the influence of man).

The structure and physiognomy of plant communities. General principles of taxonomic distribution, including the principal geographical elements in the British flora. Distribution, dispersal and endemics.

Types of plant communities. Climax communities and successional series. Woodland, grassland, transitional and desert communities : their distribution and characteristics.

Plant communities of the British Isles.

II. Distribution and Ecology of Animals :—

An elementary knowledge of zoological classification.

The zoogeographical regions and the way in which the existing faunas, with special reference to mammals, have arisen by development *in situ*, migration and extinction.

The sub-divisions of the great zoogeographical regions and faunas. The season changes of the faunas and their correlation with the plant communities.

The aquatic environment, as illustrating the principles governing the relations between animals and their surroundings.

(a) The sea : the elementary facts of the physics and chemistry of the sea so far as they bear on living things. Food chains, including the nitrogen cycle.

(b) Fresh waters and their difference from the sea particularly with regard to seasonal changes.

(c) The distribution of animals in the sea : littoral, pelagic and abyssal faunas.

(Candidates taking the special option Distribution and Ecology of Plants and Animals shall be assumed to have an elementary knowledge of Biology such as is indicated by a pass in one or more of the subjects Botany, Zoology or Biology in the Intermediate or other examination of equivalent grade.)

4(e). Distribution of Man

I. The chief human races, prehistoric and modern. Some knowledge of their distribution and biological characters.

II. Distribution of Population in the Modern World, with special reference to :—

Density and arrangement of population.

Proportions of rural and urban populations.

Distribution of the more important modern languages.

Modern migrations of population.

4(f). Economic Geography

I. A study of the influence of :—

1. Physical conditions, and

2. Human, including economic, conditions, on

(a) The production of raw materials and food-stuffs.

(b) The distribution of manufacturing industries.

(c) The development of power resources.

(d) The organization of commerce and transport.

(e) The great trade routes.

II. A study of Europe, or North America, or Asia with reference to the localization of industries and trade and the relation of these to the physical environment and the life of the inhabitants.

4(g). The Political Geography of the Modern World

The State in its geographical relations. The location, extent and resources of its territory : communications, frontiers, capital cities and metropolitan districts.

Relations of political to ethnic and linguistic units.

Political Geography of "Backward" regions — dependencies, protectorates, mandated territories.

4(h). Historical Geography

I. A general study of the inter-relation between man and his physical environment in historic time. (To be illustrated by specific instances, which may be selected anywhere in the geographical field, but adequate evidence should be available in regard to them.)

II. A more detailed study of the historical geography, as thus defined,

of the British Isles and **one** of the following regions, illustrated by specific instances :—

- The Mediterranean Region.
- Western and Central Europe.
- North America.

The manner in which facts relating to the chosen region should be studied should be geographical in character, e.g., the inter-relation of relief, climate, vegetation, etc., with historical facts like changes in the distribution of population, industries, etc., at different epochs.

4(i). History of Geographical Knowledge

Candidates will be required to show an outline knowledge of the following subjects (1–9) below, and will also be examined in a special study of **one** of them selected by the candidate. In each section special attention should be paid to the inter-relation between the discoveries and the geographical ideas of the age.

1. The growth of geographical knowledge from Herodotus to Ptolemy.
2. Geographical knowledge during the early Middle Ages down to the travels of the Polos.
3. The growth of geographical knowledge from the time of Marco Polo to the beginning of the 15th century.
4. The Great Age of Maritime Discovery down to 1529.
5. Maritime discoveries from Magellan to Tasman.
6. Maritime discoveries from Tasman to Vancouver.
7. Modern exploration of the Americas and Australia.
8. Modern exploration of Africa and Asia.
9. Polar exploration.

(Revised Regulations—for examination in and after 1955)

The course of study will normally extend over not less than three years.

The examination will consist of nine written papers, and the inspection by the examiners of the original note-books and evidence of field-work. (Material specimens should not be submitted. The examiners simply require clear records of evidence that the candidate has received instruction in field-work or has gained the necessary knowledge and experience by carrying out a proper programme of field-work on his own initiative.)

1. Physical Basis of Geography.
2. Elements of Cartography and Map Interpretation.
3. Elements of Comparative Regional Geography.
4. The British Isles.
5. Advanced Regional Geography (two papers).
6. Problems of Modern Geography, and
7. *One* optional subject (two papers), chosen from the following :—
 - (i) Mathematical Geography and Surveying ;
 - (ii) Geomorphology ;
 - (iii) Meteorology and Climatology ;
 - (iv) Plant Geography ;
 - (v) Economic Geography ;
 - (vi) Historical Geography ;
 - (vii) History of Geographical Ideas and Discovery ;
 - (viii) Political Geography.

SYLLABUSES

I. PHYSICAL BASIS OF GEOGRAPHY

Outline survey of the physical geography of Land, Air and Ocean and of major biological distributions as constituents of the human environment.

- (i) *The Land.* Nature and effects of tectonic and erosional processes in the evolution of landscape. Water supply, soils and metallogenesis (nature and emplacement of ore bodies).
- (ii) *The Air.* Elementary descriptive and synoptic meteorology. Data and methods of climatology, and the elements of micro-climatology.
- (iii) *The Ocean.* The history of oceanographic discovery. Salinity, temperature, density and structure of water masses. The circulation of the oceans. The oceanography of enclosed seas. The tides.
- (iv) *Biogeography.* Vegetation. Principles of transpiration, respiration, growth and reproduction. Food requirements. Photosynthesis and the nitrogen cycle. Fertility under conditions of cropping and grazing. Principles of plant succession and classification of plant communities. Certain aspects of animal ecology ; marine life and fisheries. Insects and insect-borne diseases.

Knowledge of (a) such general Geology as is relevant to the study of Geography, and (b) maps appropriate to this syllabus, will be regarded as an integral part of the work in this subject. The examination may include questions involving map interpretation.

2. ELEMENTS OF CARTOGRAPHY AND MAP INTERPRETATION

- A. (i) The cartographic characteristics of the major topographical and other survey maps of Europe and North America.
- (ii) The broad outlines of the history of map-making, with special reference to the development of Ordnance Survey maps.
- (iii) Cartographic and diagrammatic methods of expressing data relating to weather, climate, economic and population conditions. Candidates will be expected to be familiar with :
 - (a) The more important sources of statistical information ;
 - (b) The use and general significance of simple statistical methods ;
 - (c) The technique of drawing maps and diagrams ;
 - (d) The interpretation of (including measurements from) such maps and diagrams.
- B. (i) General principles of topographic survey, including the use of instruments in the field.
- (ii) The principles and properties of the following map projections: Zenithal (gnomonic, stereographic, orthographic, equal area, equidistant). Simple conical with one and two standard parallels. Bonne, Polyconic, International ; Sinusoidal, Mollweide, Cassini and Mercator. Candidates will be expected to construct these projections by simple graphical methods where possible, or from simple tables.

Note.—The necessary knowledge of very elementary plane trigonometry is assumed.

C. Map Interpretation.

3. ELEMENTS OF COMPARATIVE REGIONAL GEOGRAPHY

- (i) Elements of human geography. Consideration of the facts and concepts of the geography of society ; types of settlements, population densities, economy and political organization.
- (ii) The forms and inter-relations between the main land and water masses of the Earth in their bearing upon world relations in human geography and the geographical orientation of regions.
- (iii) A reasoned and critical comparative study of the nature and diversity of human settlement and economy in regions generally homologous in climate and physiography.

The ground covered in this syllabus is intended to constitute a general survey of the principles of human geography, pursued throughout by reference to specific regional examples.

4. THE BRITISH ISLES

- (i) The present conditions, the inter-relations and the evolution of the various physical, biological and human elements in the geography of the British Isles. A study of regions, including an evaluation of the relative importance of their component elements.
- (ii) Historical geography ; the study of the past as an aid to the interpretation of the present with special reference to distributions of human significance.
- (iii) Candidates will be expected to use and interpret the published maps of the Ordnance Survey, Geological Survey and Land Utilisation Survey, and to show a more detailed knowledge of areas which they have studied in the field.

5. ADVANCED REGIONAL GEOGRAPHY

The two papers under this heading will include special reference to the British Isles and Western and Central Europe and another approved Region (*e.g.*, North America or Monsoon Asia or Africa).

6. PROBLEMS OF MODERN GEOGRAPHY

The scope and method of modern Geography.

The critical appreciation of the place of the chief types of region, physical and cultural, in human geography.

Topics concerned with the subject matter of the syllabus as a whole, excluding only the specialist aspects of the Optional Subjects.

7. OPTIONAL SUBJECTS

(Candidates must state, when applying for approval of candidature, which Optional Subject they select.)

(i) *Mathematical Geography and Surveying*

The principal methods of Topographical Surveying : Air Survey ; Elements of Field Astronomy. The principles of Geodesy. An advanced study of Map Projection including those studied in Section 2 of the syllabus above.

An elementary knowledge of plane and spherical trigonometry will be assumed.

(ii) *Geomorphology*

- (i) The Earth, its nature, constitution and physical condition. Continents and ocean basins, their nature, significance and the theories of their origin. Mountain-building : Theories of orogenesis and of the related fields of tectonic geology and geo-physics. Vulcanicity.
- (ii) A critical study of the processes and results of land sculpture and the contributions of rock character thereto, under different climatic conditions. The concept of the cycle of erosion in its various applications. Drainage development and the principles employed in reconstructing the physical history or denudation chronology of a landscape.

(iii) *Meteorology and Climatology*

The more advanced study of the subject matter of the relevant sections of the syllabus in "Physical Basis of Geography" with particular reference to the following :—

- (i) The construction and use of the chief meteorological instruments. The physical processes of the atmosphere. Radiation and heat-balance. Condensation and Precipitation. Stability and Instability.
- (ii) The origin, characteristics and transformations of air masses, considered in relation to the general circulation of the atmosphere and to weather forecasting.
- (iii) The application of the general principles of elementary physical, dynamical and synoptic meteorology to the study and classification of climates.
- (iv) The evidence for climatic changes during geological and historical times and the theories of causation of such changes.

(iv) *Plant Geography*

- (i) A systematic study of characteristic economic plants (in the widest sense) and of their biological attributes, including factors in distribution.
- (ii) Plant ecology with special reference to the operation of habitat factors.
- (iii) Distribution of vegetation in Britain and the factors controlling it.
- (iv) General regional plant geography.

A knowledge of Botany to Intermediate or General Certificate of Education, Advanced Level standard is assumed. Section (ii) will involve work in the field.

(v) *Economic Geography*

The geography of production in a modern economy, with particular reference to the selection and utilisation in production of the physical conditions in the light of the economic conditions. Geographical application of distinctive economic principles such as equi-marginal utility and comparative cost ; evaluation of geographical margins of production.

- (i) Geography of primary production—Agriculture, Forestry, Mining, Fisheries.
- (ii) Geography of Manufacturing Industry.
- (iii) Geography of Trade and Transport.

A knowledge of Economics to Intermediate or General Certificate of Education, Advanced Level standard will be assumed.

(vi) *Historical Geography*

- (i) A general study of the inter-relation between man and his physical environment in historical time, to be illustrated by specific instances.
- (ii) A more detailed study of the historical geography as thus defined of the first and one other of the following regions :—
 The British Isles.
 The Mediterranean Region.
 Western and Central Europe.
 North America.
 Latin America.

(vii) *History of Geographical Ideas and Discovery*

Candidates will be required to show an outline knowledge of the subject and will be examined also in a special study of the geographical ideas and the discoveries of *one* of the following periods :—

- (i) Ancient times to A.D. 500.
- (ii) Mediaeval times up to the early 15th century.
- (iii) The 15th and 16th centuries.
- (iv) The 17th and 18th centuries.
- (v) The 19th century.

Candidates will be expected to show some first-hand acquaintance with original sources of their chosen period.

(viii) *Political Geography* .

I. A general study of the inter-relations of the geography (physical and human) and the State since the early nineteenth century.

II. Specialised study from the politico-geographical standpoint of *two* of the following subjects, one chosen from Section A, the other from Section B.

A. Specific aspects :—

- (i) Imperial expansion—in relation to particular examples.
- (ii) Frontiers and boundaries.
- (iii) Internal administrative divisions.
- (iv) Strategic geography.
- (v) Demographic geography (including migration and population trends).
- (vi) The changing political map of Europe since 1815.

B. Specific areas :—

- | | |
|-----------------------------|---------------------------------|
| (i) The Far East. | (vi) Central Europe. |
| (ii) The U.S.S.R. | (vii) Eastern Europe. |
| (iii) The Muhammadan World. | (viii) The Mediterranean Lands. |
| (iv) The Americas. | (ix) The Pacific Basin. |
| (v) Western Europe. | |

In respect of the chosen sections A and B above, candidates will be expected to show an adequate knowledge of the relevant political and economic history.

German

Seven papers will be set.

(a) The development of the German language, and prescribed Old High German texts.

All candidates will be required to be familiar with :—

- (i) The position of German in the Germanic languages.
- (ii) The main distinguishing features of High and Low German.
- (iii) The language at the Old High German stage, taking for this East Franconian as a basis.
- (iv) The development of Old High German into Middle High German, illustrated by the usage of mediaeval authors.
- (v) The rise and development of Modern Standard German, illustrated by the usage of authors from the 16th century to modern times, and covering in broad outline not only phonological and morphological aspects, but also syntactical usage.

(b) Prescribed and unprescribed Middle High German texts, and mediaeval literature.

In relation to the texts, candidates will be required to make comments of literary, linguistic, cultural or metrical interest.

(c) German Literature from 1500 to the present day.

(d) Prescribed modern texts.

(e) Translation from and into German.

(f) Essay in German.

(g) An oral examination which shall test scholarship as well as command of the spoken language.

In addition to the above, every candidate must choose **one** of the following subjects for special study, **and must state, when applying for approval of candidature, which subject and which options in each subject he selects :—**

(i) Germanic Philology. A detailed knowledge of Old High German and **one** of the following languages—Gothic, or Old Saxon, or Old Norse—will be required.

(ii) Selected literary monuments of **one** of the following :—

(a) Old Saxon with Old High German.

(b) Old Norse.

(c) Middle Low German.

(d) Middle Dutch.

(iii) **One** of the following :—

(a) The German novel in the 17th century.

(b) Goethe.

(c) The Romantic Movement in German Literature (1795–1830).

(d) German Drama in the 19th century.

(e) German Lyric poetry since 1880.

[(iv) Special subject for Internal Students only.]

(v) **One** of the following periods of German history :—

(a) The Hohenstaufen period, 1150–1254.

(b) The Revolutionary and Napoleonic Age.

This option is open only to candidates taking History as the subsidiary subject.

(vi) The Philosophy of Kant.

This option is open only to candidates taking History of Philosophy as the subsidiary subject.

Greek

All candidates will be required to have satisfied the examiners, not later than the November preceding the date of their Final Examination, in the following papers of the Intermediate Examination in Arts :—

Ancient History : Paper (2) Greek History from 776 B.C. to 146 B.C.
and Paper (3) Roman History from 753 B.C. to A.D. 337.

Candidates who have not passed in Ancient History at Intermediate Arts, or in papers (a) and (b) in History at B.A. General and who qualify by taking the relevant papers in Ancient History as a supplementary subject at a subsequent Intermediate Examination in Arts will not be required to pay an additional entry fee. Candidates for re-examination in Ancient History at the Intermediate Examination will be required to pay a fee of £2 2s.

(Candidates must state, when applying for approval of candidature, which sections and options in Papers 4-5, 7 and 8 they select.)

Ten papers of three hours each, as follows :—

1. Translation into Greek prose.
- 2-3. Unseen translation from Greek (2 papers).
- 4-5. Prescribed texts. One of the sections under Group A and one section under Group B, selected from the prescribed list (see Appendix). Candidates will be required to translate, to write an essay, to explain points of grammar, subject-matter and allusions ; and to comment on points of textual criticism in so far as they are of importance to the interpretation.

Candidates who have obtained the B.A. Honours Degree in Latin will not be required to take Paper 5.

6. Grammar and Literature, consisting of (i) passages for grammatical comment, and general questions on grammar and metre ; (ii) questions on Greek and Latin Literature. There will be one compulsory question, giving a choice of passages for grammatical comment. Sufficient options will be given throughout the paper to afford opportunities to candidates who specialize on the Greek or the Latin side.
7. A Special Subject to be selected from the following list :—
 - (a) Translation into Greek verse.
 - (b) Translation into Latin verse.
 - (c) (i) The Comparative Philology of the Greek and Latin Languages with special reference to Greek.
(ii) The Comparative Philology of the Greek and Latin Languages with special reference to Latin.
Passages for translation and linguistic comment will be set (see Appendix).
Except with the special permission of the University no candidate may offer both subjects (c) (i) and (c) (ii).
 - (d) History of Greek Drama, with a knowledge of Aristotle's *Poetics*.
 - (e) Satire in Latin Prose and Poetry.
 - (f) History of Greek Philosophy to Aristotle (inclusive).

- (g) Stoicism and Epicureanism in Roman Life and Thought.
- (h) A Greek Historical subject (see Appendix).
- (i) A Roman Historical subject (see Appendix).
- (j) Greek sculpture, pottery and vase painting from 800 to 350 B.C.
- (k) Civilization in Greece from 2000 to 600 B.C.—the archaeological material.

If a candidate so desire, he may offer (a) or (b) or both (a) and (b), as additional special subjects.

Candidates who have obtained the B.A. Honours Degree in Latin will not be required to offer paper 7.

8. Either A paper in two sections, (i) Greek and Roman Religion, and (ii) Greek and Roman Political Ideas.

Candidates will be required to show knowledge of both sections, but opportunity will be given them to display a special interest in either section. The following reading list is intended to indicate the scope of the paper ; the books are not prescribed :—

A. Greek and Roman Religion.

1. Greek

- *Adams : *The Religious Teachers of Greece.*
- E. Bevan : *Later Greek Religion.*
- *F. M. Cornford : *Greek Religious Thought.*
- W. K. C. Guthrie : *The Greeks and Their Gods.*
- G. Murray : *Five Stages of Greek Religion.*
- *M. Nilsson : *A History of Greek Religion.*
- H. J. Rose : *Ancient Greek Religion.*

2. Roman

- C. Bailey : *Phases in the Religion of Ancient Rome.*
- *W. Warde Fowler : *The Religious Experience of the Roman People.*
- *W. R. Halliday : *Lectures on the History of Roman Religion.*
- W. R. Halliday : *The Pagan Background of Early Christianity.*
- H. J. Rose : *Ancient Roman Religion.*

B. Greek and Roman Political Ideas.

- *E. Barker : *Greek Political Theory.*
- *E. Barker : *The Politics of Aristotle.*
- *Cicero : *De Republica.*
- (G. H. Sabine & S. B. Smith : *Cicero's On the Commonwealth* is recommended.)
- J. L. Myres : *The Political Ideas of the Greeks.*
- W. K. Prentice : *The Greek Political Experience.*

(Books marked * are to be regarded as basic.)

Candidates who have obtained the B.A. Honours Degree in Latin, offering this option, will not be permitted to offer it again.

or A second Special Subject to be selected from the list given above under 7.

Candidates will not be permitted to offer a Special Subject taken in a previous Honours examination.

Candidates who have not obtained the B.A. Honours Degree in Latin are further required to take :—

9. Translation into Latin prose and questions on Latin grammar.

10. Unseen translation from Latin. Questions arising out of the subject-matter of the passages set may be asked.

The standard of the two papers in Latin will not be as high as that for the B.A. Honours Examination. A pass in these two papers is essential.

A mark of special merit will be awarded to those candidates who, having passed the whole examination, have reached a high standard in the two papers in Latin. The award of a mark of special merit will be indicated on the pass list and will be recorded on the candidates' diplomas.

[*Note.*—Candidates who under these Regulations are entitled to exemptions on the ground of having previously obtained the B.A. Honours Degree in Latin may either avail themselves of the whole of such exemptions or take the whole of the Examination prescribed in the case of candidates who have not obtained the B.A. Honours Degree in Latin. Candidates who avail themselves of the exemptions to which they are entitled are informed that the Class to be assigned to them at the Honours Examination in Greek will be determined solely by the work actually presented at that Examination.]

Hebrew

Candidates will be required to take one of the following Sections, in each of which there will be an oral examination which shall be a general test of the candidate's knowledge of his subject. They must state, when applying for approval of candidature, which Section they select and which option if offering paper II.

I. Hebrew with Aramaic (including Syriac)

Ten papers will be set, with an additional optional paper.

1. Translation from specified books of the Old Testament, with questions on their language and subject-matter. Special regard will be paid to the Greek version.
2. Translation from unspecified books of the Old Testament.
3. Selections from both specified and unspecified post-Biblical texts for translation and comment.
4. Translation into Hebrew.
5. Hebrew Grammar, Syntax and Pointing.
6. Translation from unspecified Aramaic and Syriac texts. Translation into Syriac.
7. Translation from specified Syriac texts.
8. Translation from specified texts of Biblical Aramaic and Targum.
9. Comparative Grammar and North Semitic epigraphy. (One paper.)
10. Hebrew, Syriac and Aramaic Literary History, including introduction to the books of the Old Testament, Text and Ancient Versions, and an outline of a literary period or periods to be prescribed.

For Old Testament, candidates are recommended to use :—

W. O. E. Oesterley and Th. H. Robinson : *An Introduction to the Books of the Old Testament.*

W. O. E. Oesterley : *An Introduction to the Books of the Apocrypha.*

11. An additional optional paper on :—

(a) Elementary Arabic, consisting of passages from selected easy prose texts, vocalized and unvocalized, together with questions on accidence ;

- or (b) Palestinian Archaeology to 300 B.C. ;
 or (c) The Archaeology of Syria ;
 or (d) The Archaeology of Mesopotamia.

(A special note will be placed against the names of successful candidates who have satisfied the examiners in the optional paper.)

Candidates are recommended to use the following works :—

Gesenius-Kautzsch (trans. Cowley) : *Hebrew Grammar*.

Dalman : *Grammatik des Jüdisch-Palästinischen Aramäisch*.

Nöldeke : *Die Semitischen Sprachen*.

Nöldeke : *Kurzgefasste Syrische Grammatik*.

Driver : *Notes on the Hebrew text of the books of Samuel with an Introduction, etc.*

Driver : *A treatise on the Hebrew Tenses*.

Strack : *Grammatik des Biblisch-Aramäisch*.

Strack-Siegfried : *Die neu-hebräische Sprache*.

Wright : *Lectures on the Comparative Grammar of the Semitic Languages*.

Wright : *A Short History of Syriac Literature*.

[II. Section for Internal Students only.]

III. Hebrew with Arabic

1. Translation from specified books of the Old Testament, with questions on their language and subject-matter. Special regard will be paid to the Greek version.
2. Translation from unspecified books of the Old Testament.
3. Hebrew Composition.
4. Hebrew Grammar, Syntax and Pointing.
5. Comparative Grammar.
- 6-7. Translation from specified Arabic texts, with (in and after 1955) questions on their subject matter.
8. Translation from unspecified Arabic texts.
9. Translation into Arabic.
10. Arabic Grammar (including Arabic technical terms).
11. An additional optional paper on :—
 - (a) Palestinian Archaeology to 300 B.C. ;
 - or (b) The Archaeology of Syria ;
 - or (c) The Archaeology of Mesopotamia.

(A special note will be placed against the names of successful candidates who have satisfied the examiners in the optional paper.)

[IV and V. Sections for Internal Students only.]

History

Candidates will be required to take *one* of the following Branches and must state, when applying for approval of candidature, which Branch as well as which Optional and Special Subjects

they select. Candidates offering Branch I must state whether they are offering A or B and their option under B.5. Candidates offering Branch II must state their options under 4—5 and 6. Candidates offering Branch III must state their options under 3, 5 and 6. Candidates offering Branch IV must state their options under 4-5 and 6. Candidates offering Branch V must state their options under 1-2, 4, 5 and 6.

(The attention of all candidates is drawn to the general notes preceding the list of Optional and Special Subjects.)

Branch I.—Ancient and Mediaeval History

Either A :—

(Candidates who wish to offer this section must obtain special permission to do so from the University when applying for approval of candidature, and must produce satisfactory evidence of their facilities for study.)

1. The History of the Near East down to 1200 B.C.
2. The History of the Near East from 1200 to 336 B.C.
(The History of the Near East is defined as including the civilizations of Egypt and Western Asia and the Minoan Mycenaean civilizations.)
3. The History of the Greek and Roman World down to 336 B.C.
4. The History of the Greek and Roman World from 336 to 30 B.C.
5. The History of the Roman Empire from 30 B.C. to A.D. 641.
6. The History of Political Ideas. (The paper will be divided into two sections :—(i) Ancient and Mediaeval ; (ii) Modern. Candidates may confine their choice of questions to (i). They are recommended to read some of the works or portions thereof mentioned in the list on pages 316–317).
7. An optional subject selected from the list on pages 318–319 (one paper).
- 8 and 9. A special subject selected from the list on pages 319–320 (two papers).
10. Passages for translation into English from Greek, Latin, French, German, of which candidates must attempt translation of passages from at least two. They will be permitted to bring dictionaries for use in the examination. Passages will also be set in Italian, Spanish and Ancient Egyptian if candidates when submitting their entry-forms notify the University of their intention to offer any of these languages. Permission may be granted to offer another language in place of one of the foregoing, provided that candidates apply for such permission not less than 6 months before the examination.

A candidate entering for this section will be expected to have a knowledge of two of the three following languages—Ancient Egyptian, Greek, and Latin. Such knowledge will be tested in papers 1–9 and candidates are not obliged to offer these languages in paper 10.

or B :—

1. The History of the Greek and Roman World down to 336 B.C.
2. The History of the Greek and Roman World from 336 to 30 B.C.
3. The History of the Roman Empire from 30 B.C. to A.D. 400.
4. Mediaeval European History from 400 to 1200.
5. **Either** (a) Mediaeval European History from 1200 to 1500 ;

- or (b) English History down to the middle of the 15th century.

(Candidates may select questions from any two or from all three sections of the paper, which will be divided chronologically.)

Papers 6, 7, 8, 9 and 10 as for Branch I A.

Branch II.—Mediaeval and Modern History

1. English History down to the middle of the 15th century.
(Candidates may select questions from any two or from all three sections of the paper, which will be divided chronologically.)
2. English History from the middle of the 15th century to 1760.
(Candidates may select questions from any two or from all three sections of the paper, which will be divided chronologically.)
3. English History from 1760 to the present day.
(Candidates may select questions from any two or from all three sections of the paper, which will be divided chronologically.)
- 4 and 5. **Two** of the following papers in European History :—
 - (a) Mediaeval European History from 400 to 1200.
 - (b) Mediaeval European History from 1200 to 1500.
 - (c) Modern European History from 1500 to the middle of the 18th century.
 - (d) Modern European History from the middle of the 18th century to the present day.
6. (a) the History of Political Ideas.
(The paper will be divided into two sections :—(i) Ancient and Mediaeval ; (ii) Modern. Candidates must attempt questions selected from both sections. They are recommended to read some of the works or portions thereof mentioned in the list on pages 316–317.)
or (b) the Principles of Public International Law considered in its historical setting.
7. An optional subject selected from the list on pages 318–319 (one paper).
- 8 and 9. A special subject selected from the list on pages 319–320 (two papers).
10. Passages for translation into English from Greek, Latin, French, German, of which candidates must attempt translation of passages from at least two. They will be permitted to bring dictionaries for use in the examination. Passages will also be set in Italian and Spanish if candidates when submitting their entry forms notify the University of their intention to offer these languages. Permission may be granted to offer another language in place of one of the foregoing, provided that candidates apply for such permission not less than 6 months before the examination.

Branch III.—Oriental History with Special Reference to the History of India

1. The History of India : Hindu and Muslim.
(Candidates may select questions from any two or from all three sections of the paper, which will be divided chronologically.)
2. The History of India from the middle of the 18th century.

3. **Either** (a) English History from the middle of the 15th century to 1760.

(Candidates may select questions from any two or from all three sections of the paper, which will be divided chronologically.)

- or** (b) English History from 1760 to the present day.

(Candidates may select questions from any two or from all three sections of the paper, which will be divided chronologically.)

4. The History of European activities in Asia from 1500.

(Candidates will select questions from all three sections of the paper, which will be divided regionally.)

5. **Either** (a) Modern European History from 1500 to the middle of the 18th century.

- or** (b) Modern European History from the middle of the 18th century to the present day.

6. (a) the History of Political Ideas.

(The paper will be divided into three sections :—(i) Ancient and Mediaeval ; (ii) Modern ; (iii) Indian and Islamic. Candidates must select questions from sections (ii) and (iii). They are recommended to read some of the works or portions thereof mentioned in the list on pages 316-317.)

- or** (b) the Principles of Public International Law considered in its historical setting.

7. An optional subject selected from the list on pages 318-319 (one paper).

- 8 and 9. A special subject selected from the list on pages 319-320 (two papers).

10. Passages for translation into English from Greek, Latin, French, German, of which candidates must attempt translation of passages from at least two. They will be permitted to bring dictionaries for use in the examination. Passages will also be set in Italian, Spanish, Sanskrit, Persian, Urdu, Marathi, Sinhalese, Tamil and Pali if candidates when submitting their entry forms notify the University of their intention to offer any of these languages. Permission may be granted to offer another language in place of one of the foregoing, provided that candidates apply for such permission not less than 6 months before the date of the examination. Candidates may not offer both Tamil and Sinhalese and candidates offering either Tamil or Sinhalese must offer also either Sanskrit or Pali.

Branch IV.—Oriental History with Special Reference to the History of the Near and Middle East

1. History of the Near and Middle East from 395 to 1040.

2. History of the Near and Middle East since 1040.

3. The History of European activities in Asia from 1500.

(Candidates will select questions from all three sections of the paper, which will be divided regionally.)

- 4 and 5. Two of the following papers in European History :—

- (a) Mediaeval European History from 400 to 1200.

- (b) Mediaeval European History from 1200 to 1500.
- (c) Modern European History from 1500 to the middle of the 18th century.
- (d) Modern European History from the middle of the 18th century to the present day.
- (e) The History of the Arabs in Europe.

6. (a) the History of Political Ideas.

(The paper will be divided into three sections :—(i) Ancient and Mediaeval ; (ii) Modern ; (iii) Indian and Islamic. Candidates must select questions from section (iii) and **either** section (i) **or** section (ii). Candidates are recommended to read some of the works or portions thereof mentioned in the list on pages 316–317.)

or (b) the Principles of Public International Law considered in its historical setting.

(Questions on Islamic concepts of International Law will be included.)

7. An optional subject selected from the list on pages 318–319 (one paper).

8 and 9. A special subject selected from the list on pages 319–320 (two papers).

10. Passages for translation into English from Greek, Latin, French, German, of which candidates must attempt translation of passages from at least two. They will be permitted to bring dictionaries for use in the examination. Passages will also be set in Italian, Spanish, Arabic, Persian, Turkish and Russian if candidates when submitting their entry forms notify the University of their intention to offer any of these languages. Permission may be granted to offer another language in place of one of the foregoing, provided that candidates apply for such permission not less than 6 months before the examination.

Branch V.—Oriental History with Special Reference to the History of the Far East and South East Asia

1 and 2. (a) The History of China to 1644, and

(b) The History of China from 1644.

or (a) The History of Japan to 1568, and

(b) The History of Japan from 1568.

or (a) The History of the Indo-Chinese peninsula and Indonesia to the beginning of the 17th century, and

(b) The History of the Indo-Chinese peninsula and Indonesia from the beginning of the 17th century.

3. The History of European Activities in Asia from 1500. (Candidates will select questions from all three sections of the paper, which will be divided regionally.)

4. **One** of the following :—

(a) European History from 1500 to the middle of the 18th century ;

(b) European History from the middle of the 18th century to the present day.

5. One of the following :—

- (a) Outlines of Chinese History ;
- (b) Outlines of Japanese History ;
- (c) Outlines of the History of the Indo-Chinese peninsula and Indonesia ;
- (d) Outlines of Indian History.

Candidates choosing the first option for papers 1 and 2 may not offer (a) or (d), those choosing the second option for papers 1 and 2 may not offer (b) or (d), those choosing the third option for papers 1 and 2 may not offer (c).

6. (a) The History of Political Ideas.

(The paper will be divided into four sections :—(i) Ancient and Mediaeval ; (ii) Modern ; (iii) Indian and Islamic ; (iv) Chinese and Japanese. Candidates offering the History of China or the History of Japan for papers 1 and 2 must select questions from sections (ii) and (iv) ; those offering the History of the Indo-Chinese peninsula and Indonesia for papers 1 and 2 must select questions from sections (ii) and either (iii) or (iv).)

or (b) The Principles of Public International Law considered in its historical setting.

7. An optional subject selected from the list on pages 318-319 (one paper).

8 and 9. A special subject selected from the list on pages 319-320 (two papers).

10. Passages for translation into English from French and German. Passages will also be set in Classical Chinese, Modern Chinese, Classical Japanese, Modern Japanese, Mongol, Manchu, Portuguese, Dutch and Russian if candidates when submitting their entry forms notify the University of their intention to offer any of these languages. Candidates must attempt the translation of passages from at least two languages, of which it is desirable that one should be an oriental language. They will be permitted to bring dictionaries for use in the examination. Permission may be granted to offer another language in place of one of the foregoing, provided that candidates apply for such permission not less than 6 months before the examination.

Works Recommended for study of the History of Political Ideas(i) *Ancient and Mediaeval* :—

Plato : *The Republic* ; *The Laws*.

Aristotle : *The Politics*.

Cicero : *De Legibus*.

St. Augustine : *City of God* (Temple Classics), Books V, XII, XIII, XV.

Aquinas : *Summa Theologica* (translation by the English Fathers of the Dominican Order, Burns Oates and Washbourne) :
 (a) Treatise on Law : Part II (first part), Questions 90-97 and 105 ; (b) Treatise on the Vices and the Virtues : Part II (second part), Questions 57-61.

Dante : *De Monarchia*.

Marsiglio : *Defensor Pacis*.

(ii) *Modern* :—

Machiavelli : *The Prince*.

"Junius Brutus" : *Vindiciae contra Tyrannos* (*A defence of liberty against tyrants*, edited by H. J. Laski, in "Classics of Social and Political Science," Bell).

Hobbes : *Leviathan*. Part I : of Man ; Part II : of Commonwealth.

Locke : *Second treatise of Civil Government ; A letter concerning Toleration*.

Rousseau : *The Social Contract ; Three Discourses*. (As in Everyman edition.)

Burke : *Reflections on the French Revolution ; Thoughts on the cause of the present discontents ; Speeches on America, on Conciliation, etc.*

Bentham : *Fragment on Government*.

Hegel : *The Philosophy of Right*.

Marx and Engels : *The Communist Manifesto*.

J. S. Mill : *On Liberty : Representative Government*.

T. H. Green : *Principles of Political Obligation*.

(iii) (a) *Indian* :—

Select passages from *Mahābhārata*, *Ādi*, *Vana*, *Anuśāsana*, *Śānti* and *Salya Parvas*, in the translation given in Pratap Chandra Ray's edition.

The Law-books (*Dharma-śāstras*) of Manu, Yājñavalkya, and Nārada as translated by Bühler in *Sacred Books of the East*.

Kautilya's *Artha-śāstra*, translated by Shama Sastri (3rd edition, Mysore, 1919).

The Aggañña Sutta of the *Digha Nikāya* (vol. III) English translation by Rhys Davids in *Sacred Books of the Buddhists*.

Akbar-nāma by Abul Fazi (English translation by H. Beveridge ; *Biblioteca Indica* series, Asiatic Society of Bengal).

Ain-i-Akbari by Abul Fazi (English translation by Blochmann and Jarrett ; *Biblioteca Indica* series, Asiatic Society of Bengal).

(b) *Islamic* :—

Abu Yūsuf : *Kitāb al-Kharaj*. French translation by E. Fagnan, Paris, 1921.

Māwardī : *Al-Aḥkām as-Sulṭāniya*, Chapter 1. French translations by E. Fagnan (Algiers) and Ostrorog (Paris 1900–1906).

Ibn Jamā'a : *Taḥrīr al-Aḥkām*, Chapters 1 and 2. German translation by H. Koefler in *Islamica* VI and VII.

Fārābī : *Al-Madīna al-Fāḍila*. German translation by Dieterici, Leiden, 1900.

Ibn Khaldūn : *Al-Muqaddima*. French translation by De Slane, Paris, 1863–5.

Nizām al-Mulk : *Siyāset Nāme*. French translation by C. Schefer, Paris, 1891–7.

Nizāmī i'Arūzī : *Chahār Maqāla*. English translation by E. G. Browne, London, 1931.

Jalāl ad-Dīn Davānī : *Akhlaq i Jalālī*. English translation by W. F. Thompson, London, 1839.

General Notes

European History shall include some reference to the History of European Colonies.

Part at least of one of the special subject papers will be devoted to Historical Evidence, and the questions thereon will be compulsory for all candidates. Candidates taking Special Subjects 14 and 23 will be supplied in the examination room with copies of the books marked with an asterisk in the list of set books.

In view of the very considerable amount of reading necessary for B.A. Honours in History, candidates are advised (i) to select an optional subject that relates directly to the branch of History they are offering, and (ii) to select a special subject that relates as far as possible to the optional subject.

Candidates are recommended before selecting special subjects to assure themselves that they will have access to the books set.

For details of books and authorities see Appendix.

Optional Subjects

(See General Notes above)

(Candidates who wish to offer subjects (a), (m) and (p) must obtain special permission to do so from the University when applying for approval of candidature, and must produce satisfactory evidence of their facilities for study.)

- (a) The General History of Ancient Egypt down to the close of the Saite Period.
- (b) The Economic Life of the Greek City.
- (c) The Administration of the Roman Empire from 241 B.C. to A.D. 337.
- (d) Classical Art and Architecture.
- (e) Italy and the Byzantine Empire from Justinian to the end of the 12th century.
- (f) The History of Northern India from c. 550 B.C. to A.D. 1000.
- (g) Indian Political Institutions (for candidates taking Branches III, IV and V *only*).
- (h) Islamic Art and Archaeology.
- (i) Islamic Institutions (for candidates taking Branches III, IV and V *only*).
- (j) Ecclesiastical Institutions of the Middle Ages.
- (k) English Constitutional History.
- (l) English Economic History.
- (m) The Civilization of the Renaissance in Italy, 1400–1550.
- (n) Dutch History, 1609 to 1815.
- (o) British Colonial History.
- (p) The History of Latin America since 1776.
- (q) The History of the United States since 1783.
- (r) Diplomatic Relations of the Great Powers since 1815.
- (s) Islamic Law.
- (t) The History of the Arabs in Europe. (Not for students taking Branch IV.)
- [(u) Optional Subject for Internal Students only.
- (v) Optional Subject for Internal Students only.]

- (w) The Constitutional History of France since 1715.
- (x) The History of British Malaya and the Netherlands Indies from the end of the 16th century.

Options (a), (b), (c), (d), (e), (f), (j), (k), (r) and (w) shall be studied as far as possible in original documents.

Special Subjects

(See General Notes above)

(Candidates who wish to offer subjects 1, 12, 13, 20 or 26 must obtain special permission to do so from the University when applying for approval of candidature, and must produce satisfactory evidence of their facilities for study. Candidates applying for late approval of candidature will not be allowed to offer subject 1.)

1. A period in the History of Ancient Egypt. (The period to be selected by the candidate and approved by the University, which will prescribe the original authorities.)
2. Greek History, 500-433 B.C.
3. Philip II and Alexander of Macedon, 336-323 B.C.
4. Roman History, 133-70 B.C.
5. The Principates of Augustus and Tiberius, 30 B.C.-A.D. 37.
6. The History and Archaeology of Roman Britain, to be studied from literary, epigraphic and archaeological sources.
7. The Age of the Guptas, c. A.D. 320 to c. A.D. 550.
8. The Conversion and the Age of Bede, 597-735.
9. The Byzantine Empire from the accession of Basil II to the First Crusade, with special reference to its relations with the Papacy and the Holy Roman Empire.
- [10. Special Subject for Internal Students only.]
11. England in the Reign of Henry II, 1154-1189.
12. The Conciliar Movement (1378-1450), with special reference to heresy.
13. Florence and the Renaissance, 1464-1532.
14. The Economic and Social History of Tudor England.
15. The English Pioneers in South East Asia, 1578-1623.
16. Church and State in England under Charles II.
17. The Diplomatic History of the War of Spanish Succession, 1705-1714.
- [18. Special Subject for Internal Students only.]
19. The French Revolution, 1787-1795.
20. The Emancipation of Latin-America, 1808-1826.
21. The Reconstruction of Europe and the European Alliance, 1813-1822.
- [22. Special Subject for Internal Students only.]
23. The Eastern Question, 1856-1878. (For candidates taking Branches II and IV *only*.)
24. Constitutional Development in British India, 1858-1917.
25. The Growth of the British Commonwealth, 1880-1932, with special reference to the development of Dominion status and imperial co-operation and the evolution of British colonial administration in the tropical dependencies.

26. The Closing of the Frontier in the United States, 1885-1896.
 27. The Anglo-French Entente, 1898-1912.

The Derby Studentship in History

The Derby Studentship in History, a postgraduate award of the value of £150 tenable for one year, is offered to candidates at the B.A. Honours Examination.

For full particulars see the Scholarships Pamphlet.

Hungarian Language and Literature

Each application for permission to offer this subject will be considered individually, and candidates must submit, when applying for registration, a detailed statement of their proposed course of study and/or their previous training in the subject.

In 1954 only.

- (1) Translation from and into Hungarian.
- (2) Essay in Hungarian.
- (3) Outlines of the development of the Hungarian language.
- (4) Hungarian literature.
- (5) **One** of the following special periods of Hungarian literature :—
 - (a) Early Hungarian literature up to the end of the 16th century.
 - (b) Religious controversy and Baroque literature, 1594-1772.
 - (c) Period of National Renaissance (1772-1830).
 - (d) National Classicism (1830-1882).
 - (e) Modern Hungarian literature since 1882.
- (6) Essay in English.
- (7) **Either** History of the Hungarian language with Phonetics and its relation to the other Finno-Ugrian languages, **or** History of Hungarian literary criticism.

An oral examination, partly conducted in Hungarian, which will test scholarship as well as command of the spoken language.

(Candidates must state, when applying for approval of candidature, which period and option in Papers 5 and 7 they select.)

In and after 1955.

- (1) Translation from Hungarian.
- (2) Translation into Hungarian.
- (3) Essay in Hungarian.
- (4) History of the Hungarian language.
- (5) History of Hungarian literature to the end of the 18th century, with prescribed texts.
- (6) History of Hungarian literature since the end of the 18th century, with literary criticism.
- (7) and (8) Two papers on a special subject of Hungarian literature :

Either (a) The age of Vorösmarty—Petöfi—Arany.
or (b) The development of the Hungarian novel with special reference to Kemény, Jókai and Mikszáth.

An oral examination partly conducted in Hungarian, which will test scholarship as well as command of the spoken language.

(Candidates must state, when applying for approval of candidature, which option in papers 7 and 8 they select.)

Italian

Eight papers will be set.

- (a) History of the language to the present day with illustrative texts.
- (b) Early Literature to the death of Dante with set texts including a portion of the *Divina Commedia*.
- (c) and (d) Modern Literature from the death of Dante and special period with set texts.
- (e) Special subject (see Appendix).
- (f) Translation from Italian into English.
- (g) Translation from English into Italian.
- (h) Essay in Italian.
- (i) An oral examination to test the candidate's scholarship as well as his command of the spoken language.

Japanese (Classical)

Eight papers will be set.

- 1-4. Translation from specified texts with questions on their language, literary form and subject-matter.
 - 5. Translation from unspecified texts.
 - 6. Translation into Japanese (to be written in Japanese script).
 - 7. **Either** Japanese Poetry **or** translation from set Chinese texts.
 - 8. Japanese History, A.D. 800-1200, and **either** literature **or** language.
- (Candidates must state, when applying for approval of candidature, which options in Papers 7 and 8 they select.)**

Japanese (Modern)

Eight papers will be set.

- 1-2. Translation from specified texts with questions on their language, literary form and subject-matter.
- 3. Translation from unspecified texts (literary prose or verse).
- 4. Translation from unspecified texts (factual or polemical prose).
- 5. Translation into Japanese.
- 6. Composition in Japanese.
- 7. Cultural and political history of Japan since 1854.
- 8. History of Japanese literature.

There will be an oral examination conducted partly in the language and partly in English which will test scholarship as well as command of the spoken language.

Latin

All candidates will be required to have satisfied the examiners, not later than the November preceding the date of their Final Examination, in the following papers of the Intermediate Examination in Arts :—

Ancient History : Paper (2) Greek History from 776 B.C. to 146 B.C. and Paper (3) Roman History from 753 B.C. to A.D. 337.

Candidates who have not passed in Ancient History at Intermediate Arts or in papers (a) and (b) in History at B.A. General and who qualify by taking the relevant papers in Ancient History as a supplementary subject at a subsequent Intermediate Examination in Arts will not be required to pay an additional entry fee. Candidates for re-examination in Ancient History at the Intermediate Examination will be required to pay a fee of £2 2s.

(Candidates must state, when applying for approval of candidature, which sections and options in Papers 4-5, 7 and 8 they select.)

Ten papers of three hours each, as follows :—

1. Translation into Latin prose.
- 2-3. Unseen Translation from Latin (2 papers).
- 4-5. Prescribed texts. One of the sections under Group A and one section under Group B, selected from the prescribed list (see Appendix). Candidates will be required to translate, to write an essay, to explain points of grammar, subject-matter and allusions ; and to comment on points of textual criticism in so far as they are of importance to the interpretation.
(Candidates who have obtained the B.A. Honours Degree in Greek will not be required to take Paper 5.)
6. Grammar and Literature, consisting of (i) passages for grammatical comment, and general questions on grammar and metre ; (ii) questions on Greek and Latin Literature. There will be one compulsory question, giving a choice of passages for grammatical comment. Sufficient options will be given throughout the paper to afford opportunities to candidates who specialize on the Greek or the Latin side.
7. A Special Subject to be selected from the following list :—
 - (a) Translation into Greek verse.
 - (b) Translation into Latin verse.
 - (c) (i) The Comparative Philology of the Greek and Latin Languages with special reference to Greek.
(ii) The Comparative Philology of the Greek and Latin Languages with special reference to Latin.
Passages for translation and linguistic comment will be set (see Appendix).

Except with the special permission of the University, no candidate may offer both subjects (c) (i) and (c) (ii).

- (d) History of Greek Drama, with a knowledge of Aristotle's *Poetics*.
- (e) Satire in Latin Prose and Poetry.
- (f) History of Greek Philosophy to Aristotle (inclusive).
- (g) Stoicism and Epicureanism in Roman Life and Thought.
- (h) A Greek Historical subject (see Appendix).
- (i) A Roman Historical subject (see Appendix).
- (j) Greek sculpture, pottery and vase painting from 800 to 350 B.C.
- (k) History and Archaeology of Roman Britain.
- (l) Civilization in Greece from 2000 to 600 B.C.—the archaeological material.

If a candidate so desire, he may offer (a) or (b) or both (a) and (b) as additional special subjects.

(Candidates who have obtained the B.A. Honours Degree in Greek will not be required to offer Paper 7.)

8. Either A paper in two sections, (i) Greek and Roman Religion, and (ii) Greek and Roman Political Ideas.

Candidates will be required to show knowledge of both sections, but opportunity will be given them to display a special interest in either section. The following reading list is intended to indicate the scope of the paper ; the books are not prescribed :—

A. Greek and Roman Religion.

1. *Greek**Adams : *The Religious Teachers of Greece.*E. Bevan : *Later Greek Religion.**F. M. Cornford : *Greek Religious Thought.*W. K. C. Guthrie : *The Greeks and Their Gods.*G. Murray : *Five Stages of Greek Religion.**M. Nilsson : *A History of Greek Religion.*H. J. Rose : *Ancient Greek Religion.*2. *Roman*C. Bailey : *Phases in the Religion of Ancient Rome.**W. Warde Fowler : *The Religious Experience of the Roman People.**W. R. Halliday : *Lectures on the History of Roman Religion.*W. R. Halliday : *The Pagan Background of Early Christianity.*H. J. Rose : *Ancient Roman Religion.*

B. Greek and Roman Political Ideas.

*E. Barker : *Greek Political Theory.**E. Barker : *The Politics of Aristotle.**Cicero : *De Republica.*(G. H. Sabine & S. B. Smith : *Cicero's On the Commonwealth* is recommended.)J. L. Myres : *The Political Ideas of the Greeks.*W. K. Prentice : *The Greek Political Experience.*

(Books marked * are to be regarded as basic.)

Candidates who have obtained the B.A. Honours Degree in Greek, offering this option, will not be permitted to offer it again.

or A second Special Subject to be selected from the list given above under 7.

Candidates will not be permitted to offer a Special Subject taken in a previous Honours examination.

Candidates who have not obtained the B.A. Honours Degree in Greek are further required to take :—

9. Translation into Greek prose and questions on Greek grammar.

10. Unseen translation from Greek. Questions arising out of the subject-matter of the passages set may be asked.

The standard of the two papers in Greek will not be as high as that for the B.A. Honours Examination. A pass in these two papers is essential.

A mark of special merit will be awarded to those candidates who, having passed the whole examination, have reached a high standard in the two papers in Greek. The award of a mark of special merit will be indicated on the pass list and will be recorded on the candidates' diplomas.

[Note.—Candidates who under these Regulations are entitled to exemptions on the ground of having previously obtained the B.A. Honours Degree in Greek may either avail themselves of the whole of such exemptions or take the whole of the Examination prescribed in the case of candidates who have not obtained the B.A. Honours Degree in Greek. Candidates who avail themselves of the exemptions to which they are entitled are informed that the Class to be assigned to them at the Honours Examination in Latin will be determined solely by the work actually presented at that Examination.]

Malay

Candidates are required to have passed in Dutch at Intermediate Arts.

Eight papers will be set.

1. Earlier literature.
2. Later literature.

Papers 1 and 2 will contain passages from set texts for translation into English, with short comments on their language, literary forms or subject-matter.

3. Translation from unspecified texts.
4. Translation into Malay.
5. Essay in Malay.
6. Essay in English.
7. Cultural, religious, political and administrative history of the language area in outline.
8. (a) History of the language as illustrated in the set texts.
(b) History of literature.

Each part will contain six or more questions. Candidates will be required to answer six questions in all, *of which at least two must be chosen from each part.*

There will be an oral examination conducted partly in the language and partly in English which will test scholarship as well as command of the spoken language.

Mathematics (Old Syllabus)

(For Examination in 1954 only)

The examination consists of eight papers: three papers in Pure Mathematics, three papers in Applied Mathematics, and two papers containing questions in both Pure and Applied Mathematics.

The standard of the examination shall be such as can reasonably be attained in two years by a student who has already reached Intermediate standard.

The syllabus includes the Pure and Applied Mathematics of the B.A. General Examination (excluding practical Geometrical Drawing and Astronomy), and, in addition, the following :—

Pure Mathematics**Analysis**

Determinants and their use in elimination. The elementary theory of equations, including the algebraic solution of the cubic and quartic, and Sturm's theorem. Expansion of trigonometrical functions of multiple angles. Elementary spherical trigonometry, excluding the theory of the circles associated with a spherical triangle.

Limits. Mean value theorems. Taylor's theorem. Partial differentiation. Change of variables in differentiation and integration. Maxima and minima of functions of not more than two independent variables. Differentiation with regard to a parameter of an integral which has finite limits. Easy double and triple integrals.

Simple tests for the convergence of series and products. Absolutely convergent complex series. Cauchy's rule for the multiplication of two absolutely convergent series. Power series of a real variable, their uniform convergence, integration and differentiation. Binomial series (with real index), exponential and logarithmic series for complex arguments. Expansion of $\sin x$, $\cos x$, $\sinh x$, $\cosh x$, as products of quadratic factors.

Linear differential equations with constant coefficients. Differential equations of the second order with one or both variables explicitly absent. Linear simultaneous equations with constant coefficients. Integrable equations of the type $P dx + Q dy + R dz = 0$.

Simple cases of the integration of differential equations of the first and second orders in series. Simple linear partial differential equations of the first and second orders with two independent variables.

Geometry

Point and line equations in Cartesian and homogeneous co-ordinates. Systems of conics. The methods of projective geometry including projection, reciprocation, inversion, homography, and involution.

Properties of quadrics derived from their equations referred to principal axes. Plane sections of quadric including circular sections. Conjugate diameters and generators of quadric. General equation of second degree; equation of tangent plane, polar plane, and tangent cone (excluding reduction to canonical form).

Simple singularities of plane curves. Asymptotes. Envelopes. Pedal and intrinsic equations of curve. Area enclosed by curve. Arc of curve. Volumes. Surface of solid of revolution. Tracing the shape of simple curves. Twisted curves (tangent, osculating plane, curvature, torsion, Serret-Frenet formulae). Tangent plane and normal to surface in rectangular Cartesian co-ordinates.

Applied Mathematics

Statics

Reduction of a system of forces to a wrench. Conditions of equilibrium under any system of forces. Principle of virtual work. Simple cases of bending moment. Statics of inextensible chains under gravity (the problems being restricted to a plane). Stability of equilibrium in two dimensions.

Hydromechanics

Law of variation of pressure in a liquid or gas. Centres of pressure. Conditions of equilibrium and stability of floating bodies. Steady motion of rotating liquid under gravity.

Attraction and Theory of Potential

Fundamental theorems on gravitational attraction and potential, including Gauss's theorem. Laplace's and Poisson's equations in rectangular Cartesian, cylindrical, and polar co-ordinates. Simple cases of calculable attractions, potentials, and gravitational potential energy.

Kinematics

Composition and resolution of velocities and accelerations. Normal and tangential accelerations. Accelerations in ordinary systems of co-ordinates. Velocities and accelerations relative to moving rectangular axes. Kinematics of a rigid body moving in two dimensions or about a fixed point. Composition and resolution of spins.

Kinetics

Central orbits; elliptic motion and disturbed elliptic motion. Projectiles with resistance. Impulsive forces. The simple spherical pendulum. Moments of inertia. D'Alembert's principle. Applications of the principles of linear momentum, angular momentum, energy to simple systems. Lagrange's equations with easy applications. Motion of a rigid body in two dimensions. Euler's dynamical equations. The motion of the uniaxial top.

Advanced Subjects**(For Examination in 1954 and 1955 only)**

An optional examination in advanced subjects may be taken either at the same time as the Degree Examination or in a subsequent year. Successful candidates will be certified as having satisfied the examiners, or as having obtained distinction, in advanced subjects.

A candidate who takes the examination at the same time as the Degree Examination and fails to satisfy the examiners in the latter shall have no report made upon his examination in advanced subjects.

Candidates will be examined in not less than two and not more than four groups of the syllabus, and must give notice which groups they select.

One paper will be set on each group, and it is possible for a candidate to obtain distinction by sufficient work on two papers.

Pure Mathematics

1. Elementary theory of functions of a complex variable, including contour integration and conformal representation. The elements of Bessel functions and spherical harmonics. The elements of theory of vectors. (Group 1 may not be taken with Group 4 or 6.)

2. Pure and analytical geometry of two and three dimensions, including the elements of theory of curvature of curves and surfaces and the simple properties of singularities of plane algebraic curves with methods of curve-tracing.

3. More advanced differential and integral calculus, including *beta* and *gamma* functions.

Ordinary simultaneous, total, and partial differential equations.

4. Elementary theory of functions, including Cauchy's and Laurent's expansions. Convergence of series and products, including the theory of uniform convergence. The elements of the theory of elliptic functions.

5. Finite differences. Interpolation, mechanical quadrature. Laws of error. Combination of observations. Elementary theory of frequency and correlation.

6. Integration of linear differential equations in series. Fourier's series. Spherical harmonics, Bessel functions ; with applications.

Applied Mathematics

7. Dynamics and theory of potential.

8. Advanced hydrostatics, including capillarity and surface tension
Elementary hydrodynamics.

9. Elementary theory of elasticity and sound.

10. Astronomy (treated from a general standpoint ; including spherical Astronomy, Astrophysics, and Gravitational Astronomy, but excluding Lunar and Planetary Theory).

11. Optics from the point of view of instruments (mainly geometrical, with some diffraction, interference, and refraction through crystals).

12. Electro-magnetic theory (including the relevant phenomena of Light).

Mathematics (Revised Syllabus)

The standard of the examination shall be such as can reasonably be attained by a student who has already obtained the required preliminary qualifications after a course of full-time study extending over not less than three academic years.

The examination consists of eight papers, four in Pure Mathematics and four in Applied Mathematics.

Pure Mathematics*Algebra*

Properties of polynomials in one variable. H.C.F. of two polynomials ; fundamental theorem for two polynomials which are prime to one another. Theory of equations, including solution of cubic and quartic equations ; resultant of two equations. Determinants. Systems of simultaneous linear equations ; linear dependence. Definition and simple properties of matrices, with easy applications to linear transformations and quadratic forms. Signature of a quadratic form. Axioms for groups, rings and fields, with examples. Cosets of a subgroup. Homomorphism and isomorphism.

Real Variable

Definition and properties of real numbers ; Dedekind sections. General theory of limits. Continuous functions, differentiable functions, functions of bounded variation. Riemann integration. Convergence and uniform convergence of sequences, series, products and integrals ; properties of functions defined as limits. Absolutely convergent double series.

Summability of series by Cesàro's first mean. Fourier's series. Simple examples of asymptotic series.

Definition and simple properties of the Beta-function and the Gamma-function.

Properties of functions of several variables and of implicit functions. Use of Jacobians and Lagrange multipliers. Line integrals and double integrals. Differentiation and integration under the integral sign.

Simple properties of sets of points in one and two dimensions. Concept of measure.

Complex Variable

Elementary single valued and many valued functions of a complex variable. Differentiable functions. Elementary conformal transformations. Cauchy's theorem for simple contours. Theorems of Taylor, Laurent, Liouville. Evaluation of integrals and summation of series by contour integration. Rouché's theorem. Simple cases of the expression of a function as an infinite product or as an infinite series of partial fractions. Maximum modulus theorem and Schwarz's lemma.

Differential Equations

Existence theorem for the equation $dy/dx = f(x, y)$. Methods of solution of ordinary differential equations, including solution in series. Total differential equations. Simple partial differential equations of the first order : solutions of partial differential equations of the second order with constant coefficients, satisfying boundary conditions. First variation of a line integral.

Differential Geometry

Elementary differential geometry of plane curves. The Frenet-Serret formulae for a space curve, with applications using vectors. Elementary

differential geometry of surfaces, including the theorems of Euler and Meusnier. Derivation and use of the first fundamental quadratic form. Applicability. Differential equation of the geodesics on a surface.

Algebraic Geometry

Elementary pure and analytical geometry of two and three dimensions. Inversion.

Definition and fundamental properties of plane and three-dimensional projective geometry; use of general systems of homogeneous co-ordinates. Relation of euclidean to projective geometry.

General theory of homographic correspondences. Projective geometry, of conics, of homographic correspondences on conics, and of systems of conics, with metrical interpretations. The relation of apolarity. Theory and applications of symmetrical (2, 2) correspondences on a conic. General theory of plane collineations; perspective collineation; collineations which leave a conic or a point-pair invariant; metrical illustrations.

Projective geometry of quadrics; simple properties of pencils and ranges of quadrics; definition and simple properties of the twisted cubic curve, metrical applications.

Elementary line-geometry, including the properties of the linear complex, the linear congruence and the regulus; the tetrahedral complex.

Elementary properties of plane algebraic curves; multiple points and asymptotes; Newton's diagram; simple curve tracing. Unicursal curves. Use of the standard quadratic transformation $x^1 : y^1 : z^1 = ayz : bzx : cxy$.

Applied Mathematics

Vector Algebra

Vector addition, scalar and vector products, triple scalar and triple vector product.

Moment about a point, moment about an axis, vector couple, reduction of a system of localized vectors to a vector sum at a given origin and a vector couple. Equivalence of systems. Transformation of equivalent systems, reduction of a system to a vector wrench, uniqueness of reduction. The scalar and vector invariants of the system.

Mechanics

Kinematics.—Kinematics of a particle in two and three dimensions—accelerations in cylindrical and spherical polar co-ordinates. Kinematics of a rigid body—angular velocity vector, finite rotations, rigid body with one point fixed, general motion of a rigid body. Rates of change referred to rotating systems of reference.

General Principles.—Newton's laws of motion. Vector equations of motion of systems of particles. Integrals of energy, momentum, and angular momentum. Equations of impulsive motion.

Particle dynamics.—Motion in a straight line—simple harmonic motion, resisted motion, forced and damped oscillations. Motion in two dimensions—elliptic harmonic motion, simple pendulum, central orbits including inverse square and cube laws of force. Motion in three dimensions—conical pendulum, oscillations about a state of steady motion.

Rigid Dynamics.—Equations of motion of a rigid body, moments and products of inertia, parallel axes theorems; principal axes.

Two dimensional problems—motion about a fixed axis, continuous and impulsive motion parallel to a fixed plane.

Three dimensional problems—use of moving axes—motion of sphere on plane (no rotating axes), Euler's equations, motion of tops (precession, oscillations about steady precessions), (Lagrange's method may be used).

Analytical dynamics.—Configurational co-ordinates. Classification of dynamical systems, Lagrange's equations for holonomic (with applications) and non-holonomic systems, conservative systems, stability of equilibrium, small oscillation about equilibrium, normal co-ordinates, Lagrange's equation of impulsive motion. Kelvin's and Bertrand's theorems. Hamilton's canonical equations. Principles of least action and least time. Hamilton-Jacobi equation.

Theory of Vibrations and Waves.—Vibrations of a stretched string, wave motion, progressive, standing and simple harmonic waves, reflection at a discontinuity, normal modes and normal functions, Fourier's series.

Vector Field Theory

Scalar and vector functions of position. Grad, div, and curl in terms of the vector operator ∇ . Elementary algebra of the operator ∇ . Expressions in orthogonal curvilinear co-ordinates. Theorems of Gauss, Green, and Stokes. Determination of vector field in terms of sources and vortices.

Hydrodynamics

Velocity, acceleration and pressure fields. Equation of continuity. Euler's equations of motion, Bernoulli's equation. The vorticity vector. Circulation. Vortex filaments. Irrotational motion, velocity potential. Steady flow in two dimensions—the stream function, simple application of complex potentials, including Blasius' theorem. Irrotational motion in three dimensions due to sources, sinks, doublets, and line sources. Images, flow past a sphere. Surface waves, group velocity.

Electricity and Magnetism

The electrostatic field. Distribution of sources and sinks giving rise to elementary line and surface discontinuities. Conductors, capacity, Gauss's flux theorem, simple applications. Energy in electrostatic field and forces on bodies in field. Coefficients of potential, capacity, and induction. Dielectrics, polarization theory including Poisson's transformation. Simple electrostatic fields in two and three dimensions—images, use of conformal transformation, induction problems, introduction of zonal harmonics.

The magnetostatic field, interaction of two small magnets, induced magnetism.

Electric currents, linear conductors, Ohm's law, Kirchhoff's laws, simple networks. Current density vector, analogy between problems of steady current flow and those of electrostatics. Magnetic field of currents—field of straight and circular currents, magnetic flux, magnetic energy of currents, coefficients of self and mutual inductance, mechanical forces on conductors carrying currents, $c \text{ curl } H = j$. Electromagnetic induction, Faraday's law, simple A.C. circuits, generalization to $c \text{ curl } E = B$. Units. Necessity for displacement currents, Maxwell's equations.

Poynting vector, plane electromagnetic waves in dielectric and conducting media, reflection and refraction at a single plane interface, rectangular wave guide.

Statistics

Introduction to scope, material, and method of statistical investigation. Sampling and the function of probability theory in relating sample and population.

Methods of measuring variation ; frequency distributions, including the binomial, Poisson, and normal distributions with examples of their use.

Correlation and regression for two variables.

Method of Least Squares.

Standard errors ; the simpler tests of significance.

The Sherbrooke Studentship in Mathematics

The Sherbrooke Studentship in Mathematics, a postgraduate award of the value of £150 tenable for one year, is offered to candidates at the B.A. Honours Examination.

For full particulars see the Scholarships Pamphlet.

Sir John William Lubbock Memorial Prize

A Sir John William Lubbock Memorial Prize in Mathematics (value, for the present, £30) will be awarded to the best candidate who obtains First Class Honours in Mathematics at the examinations for the B.A. Honours and B.Sc. Special Degrees, whether Internal or External, on the recommendation of the external examiners ; provided that candidates for the External Examination who on the first day of the examination have exceeded six calendar months standing as students in any other University, and in that University are pursuing, or have completed, a course of study with a view to a Degree therein, shall not be eligible.

Candidates sitting at Overseas Centres are not eligible for this prize.

Pali (with Sanskrit)

Eight papers will be set.

- 1-2. Translation from set Pali texts, with questions on their language and subject-matter.
- 3-4. Translation from unspecified Pali texts.
5. Translation into Pali ; questions on Pali grammar.
6. Translation from set Sanskrit texts.
7. Translation from unspecified Sanskrit texts.
8. General paper
 - (1) The history of literature and religion in India, and (2) the comparative philology of Sanskrit, Pali and Prakrit, which may include questions relating to the principles and history of the subject and to the sounds, forms, meanings and syntax of Sanskrit, Pali and Prakrit. Each section will contain six or more questions. Candidates will be required to answer six questions in all, of which at least two must be chosen from each part.

Persian (Classical)

Nine papers will be set, with an additional optional paper.

- 1-3. Translation from specified texts, with questions on their language and subject-matter.
4. Translation from specified texts in (a) Arabic, or (b) Old Persian, or (c) Middle Persian. With (b) and (c) questions on phonetics will be set.

5. Translation from unspecified texts.
6. Translation into Persian.
7. **In 1954 only**, Persian and Arabic Grammar ; **in and after 1955**, The historical development of Islam.
8. **In 1954 only**, Persian Literature ; the historical development of Islam ; **in and after 1955**, The history of Persia from the 7th century to 1906 ; Islamic Institutions.
9. **In 1954 only**, (i) The History of Persia from the 7th–17th century.
(ii) Islamic Institutions.
(iii) The History of Political Ideas.
In and after 1955, Persian literature ; the History of Political Ideas.
10. An additional optional paper in
(a) Islamic Art and Archaeology,
or (b) Persian Architecture from 700 B.C. to A.D. 200,
or (in and after 1955) Islamic Law.

(Candidates must state, when applying for approval of candidature, which options in Papers 4 and 10 they select.)

Philosophy

The course of study will normally extend over not less than three years.

There will be nine papers :—

1. Logic and Methodology.

The outlines of the history of logic, of the main principles of its traditional Aristotelian and modern epistemological and formal developments, and of the methods of the natural and social sciences and of philosophy.

2. Epistemology and Metaphysics.

The chief theories of the nature of truth and error, doubt and supposition, of the kinds of knowledge (perceptual, conceptual, etc.), of the types of epistemology (rationalism, empiricism, transcendentalism, etc.), of the nature of being and its kinds (mental, physical, etc.) and of the types of metaphysics (idealism, realism, etc.)

3. Ethics.

The general principles and history of ethics.

4. Political Philosophy.

The general principles and history of political philosophy.

5. Greek Philosophy from the beginnings to Aristotle.

The main doctrines of the chief philosophers of the period.

6. Modern Philosophy from Bacon and Descartes to Kant.

The main doctrines of the chief philosophers of the period.

7. Set Author with Texts.

Detailed knowledge of the philosophy in its full extent, with texts, of a set philosopher, ancient or modern.

8. Essay. A wide choice of subjects will be given.

9. Optional Subject.—One of the following :—

- (a) *Psychology*. The general principles and history of psychology in its philosophical bearing.
- (b) *Aesthetics*. The general principles and history of Aesthetics.
- (c) *Symbolic Logic*. Candidates are required to be familiar with some of the elementary techniques of symbolic logic and to have a knowledge of the history of the main problems in this field and of their philosophical bearings.
- (d) *Post-Aristotelian and Mediaeval Philosophy*. The main doctrines of the chief philosophers of the period.
- (e) *Post-Kantian Philosophy to Schopenhauer*. The main doctrines of the chief philosophers of the period.
- (f) *Recent Philosophy*. The main trends of Philosophy since Schopenhauer.
- (g) *Sociology*. The theories and methods of Sociology.
- (h) *Economics*.

Principles of Economics.

The principles of Economics, including theories of population, production, value, distribution, money and banking, and international trade.

(Candidates must state, when applying for approval of candidature, which subject they select.)

There will be an oral examination.

Polish Language and Literature

In 1954 only.

- (1) Translation from and into Polish.
- (2) Essay in Polish.
- (3) History of the Polish language.
- (4) General history of Polish literature.
- (5) **One** of the following periods of Polish literature :—
 - (a) Early Polish period, up to 1543.
 - (b) From 1543 to 1795.
 - (c) From 1795 to 1863.
 - (d) From 1863 to 1907.
 - (e) From 1907 to 1939.

(6) Essay in English.

(7) **Either** Comparative Slavonic Philology with Phonetics, **or** History of Polish literary criticism.

An oral examination, partly conducted in Polish, which will test scholarship as well as command of the spoken language.

(Candidates must state, when applying for approval of candidature, which period and option in Papers 5 and 7 they select.)

In and after 1955.

- (1) Translation from Polish.
- (2) Translation into Polish.
- (3) Essay in Polish.
- (4) History of the Polish language.
- (5) History of Polish literature to 1800 with prescribed texts.

(6) History of Polish literature, including literary criticism, since 1800.

(7) and (8) Two papers. **Either** (a) a special subject of Polish literature,
or (b) Comparative Slavonic Philology with Phonetics.

An oral examination partly conducted in Polish, which will test scholarship as well as command of the spoken language.

(Candidates must state when applying for approval of candidature, which option in Papers 7 and 8 they select.)

Portuguese

Seven papers will be set.

- (a) History of the language to the present day with illustrative texts.
- (b) Early literature to the death of Fernão Lopes with set and unseen early texts.
- (c) and (d) Modern Literature from 1500.
- (e) Translation from Portuguese into English.
- (f) Translation from English into Portuguese.
- (g) Essay in Portuguese.
- (h) An oral examination to test the candidate's scholarship as well as his command of the spoken language.

Psychology (Old Syllabus)

(For Examinations in 1954 and 1955 only)

Candidates will be examined in the subjects of the B.A. General Examination carried to a higher stage, and must show a knowledge of current controversies.

The examination will be as follows :—

1 and 2. General Psychology.

(One of the two papers on General Psychology will consist of subjects for one or two essays at the candidate's choice.)

3. History of Modern Philosophy (Descartes to Kant).

4. Comparative and Abnormal Psychology.

5. The Physiology of the Nervous System and Sense Organs.

6. Experimental Psychology.

7. Two days' practical examination.

(Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away at the close of the examination. These practical note-books must contain a certificate by the teacher, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates are permitted to bring for use in the practical examination note-books containing mathematical formulae only.)

Psychology (Revised Syllabus)

The course of study will normally extend over not less than three years.

The examination will be divided into two Parts, both of which must be taken on the same occasion. A candidate who passes in one Part and fails in the other will be required on re-entry to present himself for examination in both Parts.

Candidates will be required to submit certified records of the laboratory work which they have carried out during their course for inspection by the examiners.

Part I

Part I of the Examination will consist of four written papers and a practical examination. The written papers will be : General Psychology I, Experimental Psychology I, Comparative Psychology I and History of Psychology.

The General paper will contain questions on any topic within the scope of a comprehensive general course in psychology, including the relevant experimental work. The paper on Experimental Psychology I will deal with those matters usually dealt with in standard text-books on the subject, including a study of work on conditioned reflexes and its bearing on general psychology. Comparative Psychology I will consist of two parts, (a) Animal Psychology and (b) Psychology of Childhood. Both parts will presuppose acquaintance with such parts of the sciences of biology, physiology and statistics as may be relevant to the topics included in the paper. The paper on History of Psychology will consist of two or more parts. The first part, which will be compulsory, will presuppose general acquaintance with the main stages in the history of Psychology from the period of ancient Greek thought to the end of the nineteenth century. The other parts, from which options may be selected, will require more specialised knowledge of some period or movement in the history of psychological thought or in the development of scientific method in psychology.

The practical examination may include questions on any topic forming part of a general laboratory course in psychology. The candidate may be examined orally or in other ways.

Part II

Part II of the Examination will consist of four written papers and a practical examination. The written papers will be :—General Psychology II, Experimental Psychology II, Comparative Psychology II and an Essay Paper.

The papers on General and Experimental Psychology II will deal with the subject matter of Part I carried to a more advanced stage. In the paper on Experimental Psychology II questions will be set involving translation of passages in French and German, and answers with regard to the subject-matter thereof. Candidates are required to answer *one* of these questions. Comparative Psychology II will consist of two parts, (a) Abnormal Psychology and (b) Social Psychology and the Psychology of Primitive Peoples. The section on Abnormal Psychology will pre-suppose knowledge not only of the functional disorders in mental processes, but also of those disturbances in function for the organic basis of which there is physiological and anatomical evidence. The section on Social Psychology and the Psychology of Primitive Peoples will pre-suppose knowledge of the statistical and experimental methods of Social Psychology and of the principles of Anthropology. The Essay paper will require either one or two essays on subjects to be selected from any part of the syllabus for the whole examination.

The Practical examination in Part II will consist of questions which require more advanced experimental and statistical methods than those in Part I, and the candidate may be required to plan and in part carry out an investigation of a research character requiring the adaptation of laboratory methods to problems not usually included in a laboratory course. He may also be examined orally or in other ways.

For use in the practical examinations in Psychology, candidates are permitted to bring note-books containing mathematical formulae.

Russian Language and Literature

- (1) Translation from Russian.
 - (2) Translation into Russian.
 - (3) Essay in Russian.
 - (4) History of the Russian language.
 - (5) History of Russian literature to 1800 with set texts.
 - (6) History of Russian literature, including literary criticism, since 1800.
 - (7) and (8) **Either** (a) A special subject of Russian literature,
or (b) Comparative Slavonic Philology and Phonetics.
- (Candidates must state, when applying for approval of candidature, which option they select.)**

An oral examination, partly conducted in Russian, which will test scholarship as well as command of the spoken language.

Russian Regional Studies

Each application for permission to offer this subject will be considered individually, and candidates must submit, when applying for registration, a detailed statement of their previous studies in Economics, European History and the language(s) of the region (a knowledge of all three subjects up to the standard of the Intermediate Arts Examination will normally be expected), and must produce satisfactory evidence of their facilities for study. It is essential for the candidate to have a knowledge of the geography of the region.

Candidates will not normally be allowed to take the Final Examination less than three years from the approval of their application for candidature.

- (1) Translation from Russian.
 - (2) Russian prose and composition.
 - (3) Translation from and commentary on prescribed texts.
 - (4) History of Russian Literature since 1800.
 - (5) **Either** (a) The history of Europe from 1500 to the middle of the 18th century,
or (b) Economic History since 1850, with special reference to the economic development of the Great Powers.
- Candidates taking special subjects (a) or (b) must take paper (5) (a), and those taking special subject (c) must take paper (5) (b).
- (6) and (7) The history of Russia, including the economic history of Russia.

- (8) The history of Political Ideas since 1500.
 (9) and (10) Special subject (two papers) (for details of books and authorities see Appendix) :—
 (a) The reign of Ivan IV,
or (b) The Age of Peter the Great,
or (c) Soviet Economic Structure.

An oral examination which will test the candidate's ability to speak Russian, as well as his knowledge of Russia.

(Candidates must state, when applying for approval of candidature, which subject and options in Papers 9 and 10 they select.)

Sanskrit

Eight papers will be set.

(Candidates must state, when applying for approval of candidature, which special subject and which option in paper 4 they select. Candidates offering Papers 7-8 (e) must state their choice of religion.)

- 1-2. Translation from set texts, with questions on their language and subject-matter.
3. Translation from unspecified texts.
4. Translation from set texts in **either** (a) Pali, **or** (b) Prakrit, **or** (c) Avestan.
5. Translation into Sanskrit ; questions on grammar.
6. History of Sanskrit literature (including the Vedic period).
- 7-8. Two papers on any **one** of the following special subjects :—
 (a) Indian History to A.D. 1000.

The following books are recommended for study :—

- D. C. Sircar : *Select Inscriptions bearing on Indian History and Civilization*, Vol. I (Calcutta, 1942). Passages from the Sanskrit Inscriptions contained in the above text-book may be set for translation and comment.
- Cambridge History of India*, Vol. I (ed., W. J. Rapson, Cambridge, 1922).
- H. C. Raychaudhuri : *Political History of Ancient India* (5th edition, Calcutta, 1950).
- H. C. Ray : *Dynastic History of Northern India* (2 vols., Calcutta, 1931-36) (relevant portions only).
- Beni Prasad : *The State in Ancient India* (Allahabad, 1928).
- A. Bose : *Social and Rural Economy of North India, 600 B.C.—A.D. 200* (2 vols., Calcutta, 1942-45).
- L. de la Vallée Poussin : *Indo-européens et Indo-iraniens* (Paris, 1936) ; *L'Inde aux Temps des Mauryas* (Paris, 1930) ; *Dynasties et Histoire de l'Inde depuis Kanishka jusqu'aux invasions musulmanes* (Paris, 1935) (relevant portions only).

Candidates will be required to show a sound general knowledge of the political history of the more important dynasties of Ancient and Early Mediaeval India. While the emphasis will be upon political history, questions may be set on the social and economic history of the period.

(b) Indian Archaeology to A.D. 1000.

(c) Indian Art to A.D. 1000.

(d) Indian Philosophy, with set texts. (A list of books indicating the scope of the subject may be obtained from the External Registrar.)

(Candidates who wish to offer this Special Subject must obtain special permission from the University when applying for approval of candidature, and must produce satisfactory evidence of their facilities for study.)

(e) Indian Religions.

Candidates will be required to show a knowledge of the main lines of development of the history of religion in India, and a more detailed knowledge of any one of the following :—

(a) Vedic religion, (b) Mediaeval Hinduism, (c) Jainism, (d) Buddhism.

(A list of books indicating the scope of the subject may be obtained from the External Registrar.)

(f) Hindu Law.

The persons to whom, and the cases in which, the Hindu Law is applicable in India. Statutory limitations on its application. Sources. History and development. Custom and its relation with the literary law. Change of personal law. The different schools of Hindu Law and their rules concerning marriage ; adoption ; the joint family and the rights and duties of its members ; maintenance ; partition ; guardianship and minority ; inheritance and survivorship ; the estate taken by female heirs ; *strīdhana* (but not the special rules of succession to *strīdhana*).

The standard will be similar to that of the Hindu Law paper in the LL.B. examination, but although candidates will be required to know the modern application of the law the emphasis will rather be on its historical development than on modern details. Statements of leading principles in the original Sanskrit may be set for translation and comment. For such statements see Ganganatha Jha : *Hindu Law in its Sources*, Vol. II ; J. C. Ghose : *The Principles of Hindu Law* ; and Golapchandra Sarkar Sastri : *Hindu Law*.

Of the law of *strīdhana* candidates will only be required to know general principles, and not detail. Of the law of inheritance to males they will be required to know the principles in outline, but problems set will be simple in character and such as might easily arise in everyday life.

The following book is recommended for study :—

Mayne : *Hindu Law and Usage* (10th edition by Srinivasa Iyer, 1938), especially Chapters 1-3 and 21.

(g) Sanskrit Buddhist literature, with set texts.

Winternitz : *History of Indian Literature*, Vol. II, Part I, is recommended for general study.

(h) Sanskrit Drama, with set texts.

The general history of the subject may be studied in A. Berriedale Keith : *The Sanskrit Drama*.

(i) Sanskrit Poetics, with set texts.

The following books are recommended for general study :—

S. K. De : *Sanskrit Poetics*, especially Vol. II.

P. V. Kane : *History of Alankāra Literature* (introduction to his edition of the *Sāhityadarpaṇa*).

(In 1954 only)

- (j) Comparative Philology of the Indo-European languages, with special reference to Sanskrit Greek and Latin.

(In and after 1955 this Special Subject may not be offered by External Students.)

Scandinavian Languages

- (1) Germanic Philology. Old Norse with translation of set texts.
- (2) History of the Scandinavian Languages, with special reference to mediaeval texts set for detailed study.
- (3) General History of the Scandinavian Literatures.
- (4) History of (i) Danish Literature, or (ii) Norwegian Literature, or (iii) Swedish Literature, with, in each case, the special study of selected authors and texts.

(Candidates must state, when applying for approval of candidature, which option they select.)

- (5) Set texts as under (4) ; Translation and Commentary.
- (6) Translation from the Scandinavian Languages, and translation into the language selected for special study. Candidates will be expected to show an efficient reading knowledge of the two Scandinavian Languages not chosen for special study (including Landsmaal).
- (7) Essay in the language selected for special study.
- (8) An oral examination to test scholarship as well as command of the spoken language.

Serbo-Croat and Slovene Language and Literature

(In 1954 only)

In the translation and essay papers candidates must use either Serbo-Croat or Slovene consistently. Candidates offering Serbo-Croat will be required to use both the Latin and the Cyrillic script in answering paper (1).

- (1) Translation from and into Serbo-Croat or Slovene.
- (2) Essay in Serbo-Croat or Slovene.
- (3) History of the Serbo-Croat and Slovene languages.
- (4) General history of Serbo-Croat and Slovene literature.
- (5) One of the following special periods of Serbo-Croat and Slovene literature :—
 - (a) Serbo-Croat Literature from the beginnings to Obradovic.
 - (b) Serbo-Croat Literature from Obradovic to 1890.
 - (c) Serbo-Croat Literature from 1890.
 - (d) Slovene Literature from the beginning to 1848.
 - (e) Slovene Literature from 1848.

- (6) Essay in English.

(7) Either Comparative Slavonic Philology with Phonetics, or History of Serbo-Croat and Slovene literary criticism.

An oral examination, partly conducted in Serbo-Croat or Slovene, which will test scholarship as well as command of the spoken language. (Candidates must state, when applying for approval of candidature, which period and option in Papers 5 and 7 they select.)

Serbo-Croat Language and Literature

(For Examinations in and after 1955)

Candidates will be required to use both the Latin and the Cyrillic script in answering Paper 2.

- (1) Translation from Serbo-Croat.
- (2) Translation into Serbo-Croat.
- (3) Essay in Serbo-Croat.
- (4) History of the Serbo-Croat language.
- (5) History of Serbo-Croat literature to 1836 with prescribed texts.
- (6) History of Serbo-Croat literature from 1836.
- (7) and (8) Two papers. **Either** (a) A special subject in Serbo-Croat literature,
or (b) Comparative Slavonic Philology with Phonetics.

An oral examination, partly conducted in Serbo-Croat, which will test scholarship as well as command of the spoken language.

(Candidates must state, when applying for approval of candidature, which option in Papers 7 and 8 they select.)

Sociology

Each application for permission to proceed to this examination will be considered individually and candidates must submit, when applying for registration, a detailed statement of their proposed course of study and of their previous training (if any) in the subject.

The course of study will normally extend over not less than three years.

(Candidates must state, when applying for approval of candidature, which Options they select in Papers 8, 9 and 10. A candidate will not be permitted to offer Option B, C or D of Paper 9 unless he possesses a preliminary qualification in an approved language.)

The examination will consist of ten written papers on one of the following three Options :—

Option A

1. Theories and Methods of Sociology.
2. Statistical Methods in Social Investigation.
3. Social Institutions (I).
4. Social Institutions (II).
5. Ethics.
6. Social Philosophy.
7. Social Psychology.
8. } **Either** Modern England (2 papers : (i) Social Structure,
(ii) Social History),
9. } **or** Two papers on one of the following :—

A. Some other Modern Community to be specified from time to time (2 papers as for Modern England).

B. An Oriental Civilization, ancient, mediaeval or modern.

C. Graeco-Roman Civilization.

D. Civilization of the Middle Ages :—

(1) Political and Social Institutions.

(2) Religions and Ethics.

10. **Either** (i) Demography.
or (ii) Criminology.

Option B

For those wishing to specialize in Social Administration :—

1. Theories and Methods of Sociology.
2. Statistical Methods of Social Investigation.
3. Social Institutions (II).
4. Social Administration (I).
5. Social Administration (II).
6. Social Philosophy.
7. Social Psychology.
8. } **Either** Modern England (2 papers : (i) Social Structure, (ii) Social History),
9. } **or** Some other Modern Community to be specified from time to time (2 papers as for Modern England).
10. **Either** (i) Demography.
or (ii) Criminology.

Option C

For those wishing to specialize in Social Anthropology :—

1. Theories and Methods of Sociology.
2. Statistical Methods in Social Investigation.
3. Social Institutions (II).
4. Social Anthropology (I).
5. Social Anthropology (II).
6. Regional Social Anthropology : an approved area.
7. Ethics.
8. Social Philosophy.
9. Social Psychology.
10. **Either** (i) Demography.
or (ii) Criminology.

SYLLABUSES

Sociology : Theories and Methods

The development of Sociology since Comte. Biological factors in social life. Problems of heredity and environment : studies of twins, foster children and orphans ; distribution and trend of intelligence ;

the social use of intelligence ; genetic and social aspects of race problems. The role of psychology in sociological explanation : the study of personality types in relation to social structure. The use of anthropological and historical data in sociology : the use of personal documents in sociological investigation. The value and limitations of the comparative method. The classification of social aggregates and institutions and the analysis of social processes : the concepts of social class and social status in the analysis of social structure. The concepts of culture and civilization. Theories of social development, arrest and decay. The nature of sociological generalizations and the methods used in testing them.

Statistical Methods in Social Investigation

1. *Elementary Statistical Methods*.—Collection, definition and tabulation of data. Approximations and error. Frequency groups, time series and graphical representation. Measures of average and dispersion. Index numbers. The elements of the analysis of time series. The elementary theory of regression and correlation. Sampling of proportions. Samplings for Totals and Averages from a normal population. Elementary theory of sampling design. Stratification.

2. *Sources of Social Statistics in the United Kingdom*.—Population and vital statistics. Man-power. Health and housing. Education. Crime. Nutrition. Cost of living. The nature and limitation of these statistics and the application of elementary statistical methods to them.

3. *Techniques and Problems in Social and Sociological Surveys*.—Planning social investigations. Questionnaires and interviewing. Interviewer bias. The analysis and interpretation of survey data.

Note.—Students will be expected to be familiar with the technique and results of the major social and sociological surveys in Great Britain and the United States.

(NOTE.—Logarithm tables will be provided by the University and slide rules may be brought to the examination in this subject.)

Social Institutions

Papers I and II : (Paper II will be devoted mainly to the more complex societies.)

(i) The main forms of family structure : the family and the kindred ; maternal and paternal descent ; the joint family ; regulation of marriage.

(ii) Types of political structure ; the clan and tribe ; monarchy ; feudalism ; the City State ; the forms of the modern state.

(iii) Forms of aggregation : urban and rural developments. Patterns of urban life.

(iv) Development of social control : Retaliation and the Blood feud ; the growth of public justice and rational procedure ; individual and collective responsibility ; punishment and the prevention of crime.

(v) The forms of property and economic organization : common, collective and private property, and their interrelations.

(vi) Social differentiation : slavery and serfdom ; nobility ; caste ; the main varieties of modern class structure.

(vii) Religion and other beliefs in their bearing on social relations ; relations of religion and morals.

(viii) Relations between intellectual development as seen in the control of natural forces and social change : levels of social development.

Ethics

(i) The psychological presuppositions of ethics ; impulse, desire and will. The moral sentiments.

(ii) The principal types of ethical theory : the intuitionist, rationalist and empiricist approach to ethical problems. The theory of evolution applied to morals.

(iii) The relations of sociology to ethics. The problem of moral progress.

Social Philosophy

Ethics as applied to problems of social organization. Rights and Duties. The theory of justice, distributive and corrective. Responsibility. Liberty and Equality. The ends and limits of political action. Compulsion and consent. Ethical aspects of Marriage and the Family. Ethical aspects of Property. Ethical aspects of the relations between States.

Social Psychology

Relations between Sociology and Psychology. Self-regarding and other regarding elements in human nature. Sympathy, Co-operation, competition, aggression. Social factors in the formation of personality. Psychological analysis of group structure. Group sentiments, and group consciousness. Theories of group mentality. Public Opinion and factors affecting its formation. Methods of investigating Public Opinion, Suggestion, Propaganda. Group differences in intelligence. Relative influence of heredity and environment. The psychology of Family Relationships. Psychological aspects of Property.

Modern England

(i) Social Structure

The recruitment, distribution and composition of the population. Households and families. Family characteristics. Family and poverty.

The education process. Ability and opportunity. The changing structure of education.

The entry to employment. The recruitment of the professions. Occupational and social mobility. The structure of occupations. Occupation status and levels of living. The Government in relation to levels and standards of living.

Groups—religious, professional and others. The relation between group and community. Social stratification and group consciousness.

(ii) Social History

The social development of industrialism since 1815.

The Sources and Character of Industrial Progress.—The social background of technical developments ; the rise of the factory system and industrial concentration and combination : the growth of capital and the adaptation of labour ; mass production and new forms of private enterprise ; the growth of public enterprise ; the growth of capital, the agencies of capital formation and the historical problems associated with them ; the new systems of communication ; the functions of the State in economic development ; the changing forms of property.

The Growth of Towns.—The historical problems of urbanization and suburbanization ; immigrant communities and their control ; the rise of town planning and the development of new branches of urban administration ; the growth of urban amenities and the provision for leisure and common enjoyment.

The Class Structure of Industrialism.—The growth and distribution of the population ; the displacement of the landed aristocracy and the growth of the middle classes ; the changing status of the working classes ; occupational specialization, the growth of the professions, and the

definition of new occupations ; the family in urban and rural communities ; the economic and social status of women ; the smaller family and the treatment of children ; the shorter working day ; the growth and distribution of the national income ; the change in standards of living ; the evolution of working-class needs ; the development of the agencies of thrift.

The Growth of Democracy.—The redistribution of political responsibility ; the influence of voluntary action and the rise of voluntary associations ; the scope and displacement of philanthropy ; the rise and social functions of the labour and co-operative movements ; the influence of wars on democratic development.

The Development of Social Policy.—The change in social attitudes and its influence on social policy and administration ; the history of the regulation of factories and workshops ; the problems of industrial disease and disability ; the statutory limitation of the hours of labour ; the regulation of the work of women and children ; the development of a system of public education ; the improvement of health and the statutory enforcement of holidays ; the development of the system of national insurance.

Demography

Vital statistics (including biometry), sickness and mortality, reproduction rates and other measures of fertility. Enquiries by census and by sample. Population trends and projections. The history of population growth.

Criminology

Conception of crime. Functions and methods of criminology. Criminal types and causal factors in crime ; physical ; psychological ; social and economic factors. Special problems : juvenile and female delinquency.

Penal philosophy and psychology ; especially meaning and objects of punishment. Penal history. The modern English penal system and the criminal courts. Problems of crime prevention.

Social Administration

Paper I.—Development and content of social services ; their relations to the individual, the family and the community. Services to be studied include social security services ; health and rehabilitation ; housing and town and country planning ; education ; treatment of delinquents.

Paper II.—Administration of social services ; organs of administration ; inter-relations between the social services ; statutory and voluntary agencies ; personnel problems.

Note.—Students will be expected to show some knowledge of comparable developments in countries other than Great Britain.

Social Anthropology

Papers I and II.—Scope and Methods of social anthropology ; theories of culture and society ; analysis of social structure and organization in primitive communities ; occupational and other associations ; stratified groups ; kinships organization and terminology ; types of family structure ; lineage and clan. Marriage and other institutions associated with kinship.

Economic organization : land tenure and property rights ; conception of wealth and capital ; organization of labour ; exchange of goods and services.

Political organization ; legal organization ; relation of law to custom ; moral rules, ritual and belief in relation to the society.

Paper III. Regional Social Anthropology.—The Social Structure of one of the following approved regions :—

- (a) Eastern Africa.
- (b) Central Africa.
- (c) Western Africa.
- (d) Southern Africa.
- (e) America North of Mexico (Amerindian and Eskimo cultures).
- (f) India (tribal cultures).
- (g) South-eastern Asia.
- (h) Pacific Islands.

South East European Regional Studies

Each application for permission to offer this subject will be considered individually, and candidates must submit, when applying for registration, a detailed statement of their previous studies in Economics, European History and the language(s) of the region (a knowledge of all three subjects up to the standard of the Intermediate Arts Examination will normally be expected), and must produce satisfactory evidence of their facilities for study. It is essential for the candidate to have a good knowledge of the geography of the region.

Candidates will not normally be allowed to take the Final Examination less than three years from the approval of their application for candidature.

(Candidates must state, when applying for approval of candidature, which options and periods in Papers 1, 3, 6, 9 and 10 they select.)

(1) Translation from and composition in **either** Bulgarian, **or** Hungarian, **or** Roumanian, **or** Serbo-Croat, **or** Slovene.

(2) The history of the literature of the country selected for Paper (6).

(3) **One** of the following periods of European History :—

- (a) from A.D. 400 to 1200,
- or** (b) from A.D. 1200 to 1500,
- or** (c) from 1500 to the middle of the 18th century,
- or** (d) from the middle of the 18th century to the present day.

(4) and (5) The history of South-Eastern Europe, including its economic history (two papers).

(6) The history of Bulgaria, **or** Hungary, **or** Roumania, **or** the Yugoslav lands.

(7) Modern economic structure and institutions, with special reference to South-Eastern Europe.

(8) The history of Political Ideas.

(9) and (10) Special subject (two papers) :—

- (a) The first Bulgarian Empire, 679 to 1018,
- or** (b) Hungary, 1382 to 1526,
- or** (c) Roumania, 1856 to 1914,
- or** (d) **In 1954 only**, The land question in South-East Europe since 1918.

In and after 1955, The Kingdom of Serbia, 1882–1914.

An oral examination which will test the candidate's ability to speak Bulgarian, or Hungarian, or Roumanian, or Serbo-Croat, or Slovene, as well as his knowledge of South-Eastern Europe.

Spanish

Seven papers will be set.

- (a) History of the language to the present day with illustrative texts.
 - (b) Mediaeval Literature with set and unseen early texts.
 - (c) Modern Literature from 1500.
 - (d) Modern Literature : set texts.
- (Candidates must state, when applying for approval of candidature, which group of texts they select.)**
- (e) Translation from Spanish into English.
 - (f) Translation from English into Spanish.
 - (g) Essay in Spanish.
 - (h) An oral examination to test the candidate's scholarship as well as his command of the spoken language.

Turkish

Candidates are required to have passed in Classical Arabic and in Oriental History, section (a), Outlines of the History of the Near and Middle East from A.D. 600, at Intermediate Arts.

Nine papers will be set, with an additional optional paper.

- 1-2. Translation from specified Ottoman and modern texts, with questions on their language and subject-matter.
- 3-4. Translation from unspecified Ottoman and modern texts.
- 5. Translation into modern Turkish.
- 6. Translation from (a) specified Arabic and (b) specified Persian texts.
- 7. Turkish literature.
- 8. **Either** (a) Historical development of Islam,
or (b) Historical grammar.
- 9. Ottoman history and institutions.
- 10. An additional optional paper in
or (a) History of the Turkish peoples,
or (b) Islamic art and archaeology,
or (c) The theory and history of Islamic law.

A special note will be placed against the names of the successful candidates who have satisfied the examiners in the optional paper.

(Candidates must state, when applying for approval of candidature, which option in Papers 8 and 10 they select.)

B.A. EXAMINATION

SET BOOKS APPENDIX

In this Appendix are given the lists of books set for the next two years, and, provisionally, for the third year. Candidates should be careful to consult the appropriate list.

Candidates who make use of the provisional list should obtain the Regulations issued in September next to ascertain whether any alterations have been made.

UNIVERSITY LIBRARY

Most of the books listed in this Appendix are in the University of London Library, and may be borrowed under the regulations applying to the General Library. Where a particular edition of a book is specified in the Appendix, the copy or copies which are available in the University Library are not necessarily the same.

IMPORTANT NOTE

Except in the case of volumes of selections or anthologies, the editions of set texts given in this Appendix are indicated only for the convenience of candidates. Candidates may study set texts in any accurately printed edition.

B.A. GENERAL EXAMINATION

Afrikaans

1954

- Either** *Esmoreit* (Tjeenk Willink, Zwolle),
or *Ferguut* (ed. W. van den Ent, Tjeenk Willink, Zwolle).
 *Cats : *Spaens Heydinnetje* (Tjeenk Willink, Zwolle).
 Vondel : *Lucifer* (Tjeenk Willink or Thieme, Zutphen).
 S. J. du Toit : *Die Koningin van Skeba* (ed. J. J. Smith, Nasionale Pers, Cape Town).
 E. Marais : *Gedigte* (ed. G. S. Preller, Nasionale Pers).
 C. J. Langenhoven : *Ons weg deur die wêreld*, III (Nasionale Pers).
 L. J. du Plessis : *Totius in sy verse* (Nasionale Pers).
 *N. van Wyk Louw : *Raka* (Nasionale Pers).

1955

- Gloriant* (ed. L. J. Olivier, Meulenhoff).
 *Cats : *Spaens Heydinnetje* (Tjeenk Willink, Zwolle).
 Vondel : *Joseph in Dothan* (ed. De Vooy, Meulenhoff).
 S. J. du Toit : *Die Koningin van Skeba* (ed. J. J. Smith, Nasionale Pers, Cape Town).
 E. Marais : *Gedigte* (ed. G. S. Preller, Nasionale Pers).
 C. J. Langenhoven : *Ons weg deur die wêreld*, III (Nasionale Pers).
 L. J. du Plessis : *Totius in sy verse* (Nasionale Pers).
 *N. van Wyk Louw : *Raka* (Nasionale Pers).

1956 (provisional)

- Gloriant* (ed. L. J. Olivier, Meulenhoff).
 *Hooft : *Uit de Nederlandsche Historiën*, "Het Epos van den Prins"
 (ed. A. Zijderveld and J. de Rek, Meulenhoff).
 Vondel : *Joseph in Dothan* (ed. De Vooy, Meulenhoff).
 S. J. du Toit : *Die Koningin van Skeba* (ed. J. J. Smith, Nasionale Pers, Cape Town, etc.)
 E. Marais : *Gedigte* (ed. G. S. Preller, Nasionale Pers).
 C. J. Langenhoven : *Ons weg deur die wêreld*, III (Nasionale Pers).
 D. J. Opperman : *Groot Verseboek* (Nasionale Boekhandel, Cape Town).
 *N. van Wyk Louw : *Raka* (Nasionale Pers).

* Candidates taking Afrikaans as a subsidiary subject are not required to offer this book.

Arabic (Classical)

1954, 1955 and (provisionally) 1956

- Ibn al-Ṭiqṭaqā' : *Al-Fakhri* (from accession of 'Abd al-Malik to end of al-Mutawakkil).
 Jāḥiẓ : *Kitāb al-Bukhalā'* : in 1954, Van Vloten edition, pp. 99-231, or Cairo edition, 1948, pp. 82-194 ; in 1955 and 1956, Cairo edition, 1948, pp. 82-177).

Armenian

1954, 1955 and (provisionally) 1956

- Eznik, Books I and II.
 Moses of Khoren, Book III.
 R. Zartarian : *Essays (Arjak Ėjer ev Hēk'eat'ner*, Paris, 1930).
 H. T'umanian : *Anuš*.

Bengali

1954

- (a) *Kavikaṅkan Caṇḍī*, first part to end of *Kālaketur Prasāṅga*.
- (b) Rabīndranāth Ṭhākur : *Gītāñjali* (Bengali edition).
- (c) Dwijendralāl Rāy : *Shājahān*.
- (d) Baṅkimcandra Caṭṭopādhyāy : *Devī Caudhurāṇī*.
- (e) Śaratcandra Caṭṭopādhyāy : *Pallī-Somaj*.

In 1954 only, Internal candidates whose mother tongue is not Bengali may, if they wish, be excused (a) on condition that they submit to an oral test, including dictation, reading a text written by hand, and conversation.

1955 and (provisionally) 1956

Dinesh Chandra Sen : Vanga Sahitya Parichaya, Part I, *Kavikaṅkan Caṇḍī*, pp. 338–349.

Dinesh Chandra Sen : Vanga Sahitya Parichaya, Part II : 1. Rājā Rāmmohan Rāyer *Bāṅglā Racanā*, pp. 1751–1764 ; 2. Isvaracandra Gupter *Bāṅgālā Gadya*, pp. 1809–1816 ; Akṣayakumāra Datter *Strī-śikṣā Prayojana*, pp. 1816–1819.

Rabīndranāth Ṭhākur : *Gītāñjali* (Bengali edition).

Baṅkimcandra Caṭṭopādhyāy : *Devī Caudhurāṇī*.

Śaratcandra Caṭṭopādhyāy : *Pallī-Samāja*.

Burmese

1954, 1955 and (provisionally) 1956

Maniratanabon, the first nine groups of precedents (Hanthawaddy Press edition, 1901, pp. 5–117 inclusive).

U Kha : *Chwetagyin*, Part II.

U Lu Pe Win : *U Ponnya Myittaza*, with Notes and Introduction, items 4, 5, 8, 9, 11, 22, 23, 27.

U Lat : *Sabèbin Wuttu*.

Chinese (Classical)

1954, 1955 and (provisionally) 1956

Ch'un ch'iu, *Tso chuan*, Duke Chao, Years 1–3, 7–8, 25–32.

T'ang Sung pa (ta) chia wên, Book I.

Chinese (Modern)

1954, 1955 and (provisionally) 1956

Hornglouneng (*Hung Lou Meng*), chapters I–IV.

Hwu Shyh Wentswen (*Hu Chih Wên Ts'un*) (Shanghai, Ya Tung Press), Vol. III, pp. 1–10, and Vol. IV, pp. 1–11, 151–164.

Danish

1954

Danske Folkeviser i Udvalg (ed. E. Frandsen).

* L. Holberg : *Den politiske Kandstøber*.

A. Oehlenschläger : *Hakon Jarl*.

S. S. Blicher : *En Landsbydegns Dagbog*.

* *Moderne danske Noveller og Skitser* (ed. A. Olesen).

1955*Danske Folkeviser i Udvalg* (ed. E. Frandsen).*L. Holberg : *Erasmus Montanus*.A. Oehlenschläger : *Hakon Jarl*.P. M. Møller : *En dansk students eventyr*.**Moderne danske Noveller og Skitser* (ed. A. Olesen).**1956 (provisional)***Danske Folkeviser i Udvalg* (ed. E. Frandsen).*L. Holberg : *Erasmus Montanus*.A. Oehlenschläger : *Sanct Hansaften-Spil*.P. M. Møller : *En dansk students eventyr*.*M. Andersen Nexø : *Lotterisvensken og andre noveller* (ed. K. Larsen).

* Candidates taking Danish as a subsidiary subject are not required to offer this book.

Dutch**1954****Either** *Esmoreit* (Tjeenk Willink, Zwolle),**or** *Ferguut* (ed. W. van den Ent, Tjeenk Willink, Zwolle).*Cats : *Spaens Heydinnetje* (Tjeenk Willink, Zwolle).Vondel : *Lucifer* (Tjeenk Willink, Zwolle).Potgieter : *Uit Potgieter's Werk* (ed. F. G. Engels, Tjeenk Willink, Zwolle).Multatuli : *Max Havelaar* (ed. G. Stuiveling, Van Oorschot, Amsterdam, 1949).Verwey : *Cola Rienzi* (Versluys, Amsterdam).*Streuveld : *De Oogst* (Veen, Amsterdam).**1955***Gloriant* (ed. L. J. Olivier, Meulenhoff).*Cats : *Spaens Heydinnetje* (Tjeenk Willink, Zwolle).Vondel : *Joseph in Dothan* (ed. De Vooys, Meulenhoff).*Potgieter : *Uit Potgieter's werk* (ed. F. G. Engels, Tjeenk Willink, Zwolle).Bosboom-Toussaint : *De Delftsche Wonderdokter* (ed. H. H. Broekstra, Meulenhoff).Verwey : *Cola Rienzi* (Versluys, Amsterdam).Van der Leeuw : *Verhalen en verzen* (ed. C. Ypes, Meulenhoff).**1956 (provisional)***Gloriant* (ed. L. J. Olivier, Meulenhoff).*Hooft : *Uit de Nederlandsche Historiën*, "Het Epos van den Prins" (ed. A. Zijdeveld and J. de Rek, Meulenhoff).Vondel : *Joseph in Dothan* (ed. De Vooys, Meulenhoff).*Staring : *Poëzie* (Tweede Bundel), ed. J. H. van den Bosch (Tjeenk Willink, Zwolle).Bosboom-Toussaint : *De Delftsche Wonderdokter* (ed. H. H. Broekstra, Meulenhoff).A. van der Leeuw : *Verhalen en verzen* (ed. C. Ypes, Meulenhoff).A. van Schendel : *De Waterman* (Nygh and Van Ditmar, Rotterdam).

* Candidates taking Dutch as a subsidiary subject are not required to offer this book

English

1954

Paper 1

Wyatt : *Anglo-Saxon Reader*, extracts I, *The Chronicle*, A.D. 755-897 ; II, 2 and 3 *Ohthere's Voyages* and *Wulfstan's Voyage* ; VII, 4 *Cædmon* ; XI, *Ælfric's Homilies* ; XXIV, *The Wanderer* ; XXVI, *Beowulf* : 1 *Of Scyld*, lines 1-52, 2 *Beowulf's Swimming-Match with Breca*, lines 499-606, 3 *The Vengeance of Grendel's Mother*, lines 1251-1309, 4 *Beowulf Brings back Grendel's Head*, lines 1572-1676 ; XXVIII, *Dream of the Rood* ; XXXIV, *The Battle of Maldon*.

Chaucer : *The Clerk's Tale*.

Langland : *Piers Plowman*, Prologue and Passus VII.

Paper 2

(a) Spenser : *Mother Hubberds Tale*.

Jonson : *The Silent Woman*.

Browne : *Religio Medici*.

Dryden : *MacFlecknoe* ; *The Medall*.

(b) Shakespeare : *Romeo and Juliet* ; *Coriolanus*.

Milton : *Samson Agonistes*.

Paper 3

Period 1832-1880.

Special Authors : Tennyson and George Eliot.

1955

Paper 1

Wyatt : *Anglo-Saxon Reader*, extracts I, *The Chronicle*, A.D. 755-897 ; II, 2 and 3 *Ohthere's Voyages* and *Wulfstan's Voyage* ; VII, 4 *Cædmon* ; XI, *Ælfric's Homilies* ; XXIV, *The Wanderer* ; XXVI, *Beowulf* : 1 *Of Scyld*, lines 1-52, 2 *Beowulf's Swimming-Match with Breca*, lines 499-606, 3 *The Vengeance of Grendel's Mother*, lines 1251-1309, 4 *Beowulf Brings back Grendel's Head*, lines 1572-1676 ; XXVIII, *Dream of the Rood* ; XXXIV, *The Battle of Maldon*.

Chaucer : *The Clerk's Tale*.

Havelok, lines 1-1390.

Paper 2

(a) Spenser : *Mother Hubberds Tale*.

Jonson : *The Silent Woman*.

Browne : *Religio Medici*.

Dryden : *MacFlecknoe* ; *The Medall*.

(b) Shakespeare : *Romeo and Juliet* ; *Coriolanus*.

Milton : *Samson Agonistes*.

Paper 3

Period 1740-1798.

Special Authors : Johnson and either Gray or Burns.

1956 (provisional)

Paper 1

Wyatt : *Anglo-Saxon Reader*, extracts I, *The Chronicle*, A.D. 755-897 ; II, 2 and 3 *Ohthere's Voyages* and *Wulfstan's Voyage* ; VII, 4 *Cædmon* ; XI, *Ælfric's Homilies* ; XXIV, *The Wanderer* ; XXVI, *Beowulf* : 1 *Of Scyld*, lines 1-52, 2 *Beowulf's Swimming-Match with Breca*, lines 499-606, 3 *The Vengeance of Grendel's Mother*, lines 1251-1309, 4 *Beowulf Brings back Grendel's Head*, lines 1572-1676 ; XXVIII, *Dream of the Rood* ; XXXIV, *The Battle of Maldon*.

Chaucer : *The Knight's Tale*.

Havelok, lines 1-1390.

Paper 2

(a) Sidney : *Apology for Poetry*.Marvell : *Lyrical Poems*.Bacon : *New Atlantis*.Congreve : *Love for Love*.(b) Shakespeare : *Macbeth* ; *The Winter's Tale*.Spenser : *Faerie Queene*, Book VI.

Paper 3

Period 1740–1798.

Special Authors : Johnson and **either** Gray **or** Burns.**Ethics**

1954

The Moral Sense school, with special reference to **either** *British Moralists* (ed. L. A. Selby-Bigge, Oxford University Press), Vol. I, pp. 1–187, containing Shaftesbury : *Inquiry concerning Virtue or Merit*, and Hutcheson : *Inquiry concerning the original of our Ideas of Virtue or Moral Good* ; Appendix, Vol. I, pp. 431–481, containing extracts from Hutcheson : *Essay on the Nature and Conduct of the Passions and Affections* ; *Illustrations upon the Moral Sense* ; *System of Moral Philosophy*, **or** Bishop Butler : *Sermons* I, II and III, and *Dissertation on the Nature of Virtue* (Benn), and R. Price : *Review of the Principal Questions in Morals*.

1955 and (provisionally) 1956

Aristotle : *The Nicomachean Ethics*.**French**

1954

Paper 2

Corneille : *Le Menteur*.Molière : *L'Ecole des Femmes*.Racine : *Britannicus*.La Bruyère : *De l'Homme* and *De la Mode*.Montesquieu : *Lettres persanes*.Abbé Prévost : *Manon Lescaut*.Rousseau : *Lettre à M. d'Alembert sur les Spectacles*.

Paper 3

Lamartine : *Premières Méditations* (Garnier).Balzac : *Le Père Goriot*.Vigny : *Servitude et grandeur militaires*.Musset : *Lorenzaccio*.Leconte de Lisle : *Poèmes* (Edition Eggli, Manchester).Fromentin : *Dominique*.

1955

Paper 2

Corneille : *Horace*.Molière : *L'Ecole des Femmes*.Racine : *Britannicus*.La Bruyère : *De l'Homme* and *De la Mode*.Montesquieu : *Lettres persanes*.Abbé Prévost : *Manon Lescaut*.Rousseau : *Discours sur les origines de l'inégalité parmi les hommes*.

Paper 3

Lamartine : *Premières Méditations* (Garnier).

Balzac : *Le Père Goriot*.

Vigny : *Servitude et grandeur militaires*.

Musset : *Il ne faut jurer de rien*.

Verlaine : *Fêtes Galantes, La Bonne Chanson, Romances sans paroles* (ed. Underwood, Manchester University Press).

Saint-Exupéry : *Terre des hommes*.

1956 (provisional)

Paper 2

Corneille : *Horace*.

Molière : *Le Tartuffe*.

Racine : *Britannicus*.

La Bruyère : *De l'Homme and De la Mode*.

Marivaux : *Les Fausses Confidences*.

Voltaire : *Zadig and Candide*.

Rousseau : *Discours sur les origines de l'inégalité parmi les hommes*.

Paper 3

Balzac : *Le Père Goriot*.

Musset : *Il ne faut jurer de rien*.

V. Hugo : *Légende des Siècles* (Blackwell's French Texts).

Flaubert : *Madame Bovary*.

Verlaine : *Fêtes Galantes, La Bonne Chanson, Romances sans Paroles* (ed. Underwood, Manchester University Press).

Saint-Exupéry : *Terre des hommes*.

German

1954

Wright : *Middle High German Primer* (4th edition) : *Nibelungenlied* extracts ; *Parzival* (both extracts).

Lessing : *Emilia Galotti*.

Goethe : *Egmont*.

Heine : *Buch der Lieder* (Manchester University Press).

Brentano : *Geschichte vom braven Kasperl und dem schönen Annerl*.

*Hoffmann : *Das Fräulein von Scuderi*.

*Thomas Mann : *Tristan*.

1955

Wright : *Middle High German Primer* (4th edition) : *Nibelungenlied* extracts ; *Iwein* extract, lines 259–802.

Schiller : *Die Braut von Messina*.

Goethe : *Die Leiden des jungen Werthers*.

Heine : *Buch der Lieder* (Manchester University Press).

Brentano : *Geschichte vom braven Kasperl und dem schönen Annerl*.

*Thomas Mann : *Tristan*.

*Keller : *Kleider machen Leute*.

1956 (provisional)

Wright : *Middle High German Primer* (4th edition, ed. Walshe) : *Tristan* (whole extract) ; *Iwein* extract, lines 259–802.

Schiller : *Die Braut von Messina*.

Goethe : *Die Leiden des jungen Werthers*.

Hofmannsthal : *Gedichte* (Insel-Bücherei).

Grillparzer : *Der arme Spielmann*.

*Hesse : *Kinderseele* (Duckworth).

*Keller : *Kleider machen Leute*.

Greek (Classical)

The texts used by the examiners in setting the examination papers will be the Oxford Classical Texts (Clarendon Press) unless some other text is specified.

1954

Thucydides : Book II (1-65).

Euripides : *Hippolytus*.

*Demosthenes : *Three Private Speeches* (ed. Doherty).

Homer : *Odyssey*, Books XV and XVI.

Plato : *Republic*, Book X.

*Aristophanes : *Clouds*.

1955

Homer : *Odyssey*, Books XV and XVI.

Plato : *Republic*, Book X.

*Aristophanes : *Clouds*.

Thucydides, Book VII.

*Lysias : *Orations*, Nos. 4, 5, 6, 8.

Sophocles : *Oedipus Tyrannus*.

1956 (provisional)

Thucydides, Book VII.

*Lysias : *Orations*, Nos. 4, 5, 6, 8.

Sophocles : *Oedipus Tyrannus*.

Homer : *Iliad*, Books VI and XXII.

*Aristophanes : *Frogs*.

Plato : *Phaedo*. (Note.—No questions will be set on the Greek text between 76E, line 8, and 107A, line 7.)

* Candidates taking Greek as a subsidiary subject are not required to offer this book.

Gujarati**1954**

(a) Premānanda Bhaṭṭa : *Māmeruṃ* (Dr. Taraporewala's Collections, pp. 362-384).

(b) Anjāriyā : *Kavitā-Praveśa*.

(c) Narmadāśankar : *Narma-gadya*, pp. 1-150.

(d) Dhūmketu : *Taṅkhā*, Part I, pp. 1-111.

(e) R. V. Desai : *Divya-cakṣu*, pp. 1-197.

(f) N. D. Kavi : *Uṣā*.

In 1954 only, Internal candidates whose mother tongue is not Gujarati may, if they wish, offer only (b), (c) and (f), on condition that they submit to an oral test, reading a text written by hand, and conversation.

1955 and (provisionally) 1956

Premānand : *Okhāharaṇ* (Bṛhat Kāvya Dohan, Part I).

Anjāriyā : *Kavitā-Praveśa*.

Narmadāśankar : *Narma-gadya*, pp. 1-150.

Dhūmketu : *Taṅkhā*, Part I, pp. 1-111.

R. V. Desai : *Divya-cakṣu*, pp. 1-197.

N. D. Kavi : *Uṣā*.

Hebrew (Classical)**1954**

Genesis ; Numbers ; Isaiah I-XI ; Zechariah I-IX ; Proverbs I-X ; Lamentations.

1955

Genesis ; Exodus ; Isaiah I–XI ; Jeremiah XL–LII ; Proverbs XXV–XXXI ; Lamentations.

1956 (provisional)

Exodus ; Deuteronomy ; Isaiah XII–XXVI ; Jeremiah XL–LII ; Proverbs XXV–XXXI ; Canticles.

Hindi

1954

Prem Cand : *Mān Sarovar*, Part I (Stories 1–6) (published by the Sarasvatī Press, Benares, 1936).

L. N. Miśra : *Rākṣas Kā Mandir* (published by the Leader Press, Allahabad).

M. S. Gupta : *Jayadrath Vadh* (published by the Sahitya Sadan, Cirgaon, Jhansi).

Tulsī Dās : *Rām Carit Mānas* (*Ayodhyā Kāṇḍ*, Dohas 1–119) (edition Tulsī Granthāvalī, published by the Nāgarī Pracāriṇī Sabhā, Benares).

1955

Prem Cand : *Karmabhūmi* (Sarasvatī Press, Banaras).

L. N. Miśra : *Rākṣas kā mandir* (Leader Press, Allahabad).

M. Ś. Gupta : *Jayadrath-vadh* (Sāhitya Sadan, Jhansi).

Tulsī Dās : *Rāmcaritmānas*, *Ayodha Kāṇḍ*, 1–47 (edition: *Tulsigranthāvalī*, Nāgarī Pracāriṇī Sabhā, Banaras).

1956 (provisional)

Prem Cand : *Karmabhūmi* (Sarasvatī Press, Banaras).

L. N. Miśra : *Rākṣas kā mandir* (Leader Press, Allahabad).

M. Ś. Gupta : *Sāket*, Canto IV (Sāhitya Sadan, Jhansi).

Dhīrendra Varmā : *Vicār Dhārā*, the first five essays (Sāhitya Bhavan, Allahabad).

Tulsī Dās : *Rāmcaritmānas*, *Bāl Kāṇḍ*, 70–112 ; 353–380. (Edition: *Tulsigranthāvalī*, Nāgarī Pracāriṇī Sabhā, Banaras).

Irish

For External Students only.

1954, 1955 and (provisionally) 1956

Old Irish

Strachan : *Old Irish Paradigms and Selections from the Old Irish Glosses* (revised O. Bergin, 1949), pp. 103–136.

Strachan : *Stories from the Táin* (revised O. Bergin, 1944).

Late Middle and Early Modern Irish

Buile Shuibhne (ed. O’Keeffe ; either the 1913 or 1931 edition).

Tromdámh Guaire (ed. Joynt, 1931).

E. Knott : *An Introduction to Irish Syllabic Poetry* (1928).

Italian

1954

Paper 2

Dante : *Purgatorio*, Cantos 1–12, 14, 16, 19, 27–28, 30–33 (ed. Casini-Barbi, Sansoni).

Either G. Carducci : *Primavera e Fiore della Lirica Italiana* (Sansoni), Vol. I, pp. 73–117, 135–173, 191–210, 255–284, or *The Oxford Book of Italian Verse* (2nd edition, 1952), Nos. 62–94, 124–140, 149–160, 208–227.

Paper 3

Manzoni : *I Promessi Sposi* (ed. Scherillo, Hoepli).

Leopardi : *Canti* (ed. Straccali, Sansoni).

Either G. Carducci : *Primavera e Fiore della Lirica Italiana* (Sansoni), Vol. II, pp. 583-613, 632-645, 653 to end, **or** *The Oxford Book of Italian Verse* (2nd edition, 1952), Nos. 307-315, 330-338, 341-352.

1955 and (provisionally) 1956

Paper 2

Dante : *Inferno*, Cantos 1-11, 13, 15, 19, 26-27, 33-34 (ed. Casini-Barbi, Sansoni).

Either G. Carducci : *Primavera e Fiore della Lirica Italiana* (Sansoni), Vol. I, pp. 73-117, 135-173, 191-210, 255-284, **or** *The Oxford Book of Italian Verse* (2nd edition, 1952), Nos. 62-94, 124-140, 149-160, 208-227.

Paper 3

Manzoni : *I Promessi Sposi* (ed. Scherillo, Hoepli).

Leopardi : *Canti* (ed. Straccali, Sansoni).

Either G. Carducci : *Primavera e Fiore della Lirica Italiana* (Sansoni), Vol. II, pp. 583-613, 632-645, 653 to end, **or** *The Oxford Book of Italian Verse* (2nd edition, 1952), Nos. 307-315, 330-338, 341-352.

Japanese (Classical)

1954, 1955 and (provisionally) 1956

Ise-monogatari, extract (E. & R. I., 222-227).

Koou-honki, extract (E. & R.I., 248-258).

Taketori-monogatari, extract (E. & R.I., 229-245).

Yosida-Kenkoo : *Turezure-gusa*, extracts (D., 86-96).

Selections from *Kokin-wakasyuu* (E. & R.I., 228).

Ozaki-Kooyoo : *Siobara*, extract (D., 80-84).

Takayama-Tyogyuu : *Nitiren-syoonin* (E. & R.I., 213-217).

Selection of letters (E. & R.I., 285-291, 294-295 line 3, 296 line 11-297).

Akutagawa-Ryuunosuke : *Kumo no ito* (D., 36-48).

Hisamatu-Sen-iti : *Kokubungaku no seisin* (E. & R.I., 24-35).

Huzii-Kenziroo : *Zinsei no syukuzu* (D., 64-80).

Natume-Sooseki : *Sore kara* (E. & R.I., 181-184).

Natume-Sooseki : " *Tuti* " *ni tuite* (E. & R.I., 91-105).

(Page references are to :—

D—F. J. Daniels : *Japanese Prose* (Lund Humphries & Co., London 1944) ;

E. & R.I.—S. Elisséeff & E. O. Reischauer: *Selected Japanese Texts for University Students*, Vol. I (Harvard-Yenching Institute 1944.).

Latin

The texts used by the examiners in setting the examination papers will be the Oxford Classical Texts (Clarendon Press) unless some other text is specified.

1954

Plautus : *Rudens*.

Cicero : *Pro Milone*.

*Juvenal : *Satires* 1, 3, 10, 13.

Livy : Book XXX.

Virgil : *Aeneid*, Book XII.

*Tacitus : *Annals*, Book XIV.

1955

Livy, Book XXX.

Virgil : *Aeneid*, Book XII.

*Tacitus : *Annals*, Book XIV.

Terence : *Adelphi*.

*Horace : *Epistles*, I.

Cicero : *Philippic* II.

1956 (provisional)

Terence : *Adelphi*.

*Horace : *Epistles*, I.

Cicero : *Philippic* II.

*Livy, Book XXIII.

Virgil : *Georgics* II and IV.

Pliny : *Select Letters* (Allen).

* Candidates taking Latin as a subsidiary subject are not required to offer this book.

Malay

1954, 1955 and (provisionally) 1956

Sĕjarah Mĕlayu (ed. Winstedt).

Hikayat 'Abdullah.

Marathi

1954, 1955 and (provisionally) 1956

(a) V. L. Bhāve : *Mahārāshṭra Sārasvāt*, Vol. I, chapters 1 and 2.

(b) Paṭvardhan & Keḷkar : *Tukārāmānchyā Abhangānchi Charchā*, Part I, Nos. 65–80, 131, 161, 204, 226.

(c) S. V. Pendase : *Rasatarangiṇi*, poems of Jnānadeva, Rāmdās (pp. 160–170) and Dāmle.

(d) D. G. Kelkar : *Śri Mahārāshṭra Śāradā* : in 1954, poems by Govindāgraja, Bālakavi and Yaśvant ; in 1955 and 1956, poems by Tāmbe, Mādhav Julian, Bālakavi and Ṭilak.

(e) K. P. Khāḍilkar : *Savāi Mādhavarāo yānchā mr̥tyu*.

In 1954 only, Internal candidates whose mother tongue is not Marathi may, if they wish, be excused (a) on condition that they submit to an oral test, including reading printed documents and conversation.

Military Studies

1954, 1955 and (provisionally) 1956

Paper 3 (a)

The Campaign in Burma, 1944–1945.

To be studied in the following Official Despatches :—

Report to the Combined Chiefs of Staff by the Supreme Allied Commander, South East Asia 1943–45, Lord Mountbatten (H.M.S.O., 1951).

Operations in Burma and North East India 16/11/43—22/6/44, General Giffard (H.M.S.O.) *Supplement to the London Gazette* 13/3/51. *Map Supplement* (H.M.S.O.).

Operations in Assam and Burma 23/6/44—12/11/44, General Giffard (H.M.S.O.) *Supplement to the London Gazette* 30/3/51.

Operations in Burma 12/11/44—15/8/45, General Leese (H.M.S.O.) *2nd Supplement to the London Gazette* 6/4/51.

Old Norse

1954

E. V. Gordon : *An Introduction to Old Norse* : I, *West Norse*.

*Poetic Edda (ed. Finnur Jónsson, Reykjavík) : *Völundarkviða*, *Baldrs draumar*, *Atlakviða*, *Reginismál*, *Fáfnismál*, *Guðrúnarkviða I*, *Helreið Brynhildar*.

1955 and (provisionally) 1956

Gunnlaugssaga (edition published by the Viking Society).

Snorri Sturluson : *Haraldssaga harðraða* (published by Menntamálaráð, Reykjavík, with Introductory Note by Sir William Craigie), chs. 75–end (pp. 77–101).

Gordon : *Introduction to Old Norse*, sections II, III, IV, VI, VII, VIII, X, XII, XIII, XVII.

*Poetic Edda : *Skírnismál*, *Rígsþula*, *Völundarkviða*, *Guðrúnarkviða I*, *Atlakviða*.

* Candidates taking Old Norse as a subsidiary subject are not required to offer this book.

Norwegian

1954

H. Ibsen : *Peer Gynt*.

J. Lie : *Livsslaven*.

Olav Duun : *Hilderøya*.

*B. Bjørnson : *En glad gutt*.

*A. Kielland : *Gift*.

1955

H. Ibsen : *Peer Gynt*.

J. Lie : *Livsslaven*.

Olav Duun : *Hilderøya*.

*B. Bjørnson : *Arnljot Gelline*.

*A. Kielland : *Skipper Worse*.

1956 (provisional)

H. Ibsen : *Peer Gynt*.

*B. Bjørnson : *Arnljot Gelline*.

*A. Kielland : *Skipper Worse*.

A. Garborg : *Bondestudentar*.

K. Hamsun : *Sult*.

* Candidates taking Norwegian as a subsidiary subject are not required to offer this book.

Pali

1954

Majjhima Nikāya, suttas 50–56 (P.T.S. ed., Vol. I, pp. 332–387).

Dīgha Nikāya, sutta 14 (*Mahāpadāna*) (P.T.S. edition Vol. II, pp. 1–54).

Dhammapada, vaggas 15–26.

1955 and (provisionally) 1956

Majjhima Nikāya, suttas 50–56 (P.T.S. ed., Vol. I, pp. 332–387).

Dīgha Nikāya, sutta 14 (*Mahāpadāna*) (P.T.S. edition, Vol. II, pp. 1–54).

Dhammapada, vaggas 1–16.

Persian (Classical)**1954, 1955 and (provisionally) 1956**Sa'di : *Būstān*, Chapter II.Nizāmī 'Arūzī : *Chahār Maqāla*, First Discourse.Narshakhī : *Tārīkhī Bukhārā* (ed. Mudarris Rizavi, Tehrān).**History of Philosophy****1954**

Paper 2

Leibniz : *The Monadology* (ed. Latta, O.U.P.) ; *Correspondence with Arnauld*.

Paper 3

Berkeley : *Three Dialogues between Hylas and Philonous*.**1955 and (provisionally) 1956**

Paper 2

Leibniz : *The Monadology* (ed. Latta, O.U.P.) ; *Correspondence with Arnauld*.

Paper 3

Reid : *Essays on the Intellectual Powers of Man* (ed. Woosely).**Portuguese****1954, 1955 and (provisionally) 1956**

Paper 2

Oxford Book of Portuguese Verse (ed. Aubrey Bell, 1925) : poems of Garcia de Resende, Gil Vicente, Bernadim Ribeiro, Christovam Falcam, Francisco de Sá de Miranda, Luis de Camões, Francisco Rodrigues Lobo.Gomes de Brito : *História Trágico-Marítima* : shipwrecks of the period 1589-1622 inclusive (*São Thomé, Santo Alberto, São Francisco, Santiago, Conceição, São João Baptista*).António Vieira : *Cartas* (ed. J. Lucio de Azevedo, Coimbra, 1925-28), Vol. I, pp. 269-592.

Paper 3

Oxford Book of Portuguese Verse (ed. Aubrey Bell, 1925) : poems of Almeida-Garrett, Feliciano de Castilho, Herculano e Araujo, João de Deus, Thomaz Ribeiro, Anthero de Quental, Gonçalves Crespo, Gomes Leal, Guerra Junqueiro, Afonso Lopes Vieira and Correa de Oliveira.*Camilo Castello-Branco : *Amor de perdição*.Oliveira Martins : *História da civilização Ibérica*.*Ferreira de Castro : *A Lã e a neve*.Fernando Pessoa : *Mensagem*.Sophia Andresen : *Dia do Mar*.* Candidates taking Portuguese as a subsidiary subject need offer only *one* of these two books.**Sanskrit****1954***Rgveda*, II, 12 ; IV, 51 ; V, 83 ; VI, 54 ; VII, 49 ; VIII, 29 ; X, 14, 127, 129 (these hymns are contained in Macdonell : *Vedic Reader for Students*).*Pratijñāyāugandharāyana*.*Kālidāsa* : *Kumārasambhava*, Canto III.

1955 and (provisionally) 1956

R̥gveda, II, 12 ; IV, 51 ; V, 83 ; VI, 54 ; VII, 49 ; VIII, 29 ; X, 14, 127, 129 (these hymns are contained in Macdonell : *Vedic Reader for Students*).

Sāvitryupākhyāna (*Mahābhārata* ; *Vanaparvan*).

**Daśakumāracarita* II (Apahāravarman's story, first half, up to *pratyabadhnāc cārthapatiḥ*).

Pratijñāyauḡandharāyaṇa.

Kālidāsa : *Kumārasambhava*, Canto III.

Candidates taking Sanskrit as a subsidiary subject are not required to offer this book.

Scottish Gaelic

For External Students only.

1954, 1955 and (provisionally) 1956

Either Carswell : *The Book of Common Order* (ed. McLauchlan), pp. 1-53, **or** O. Bergin : *Stories from Keating's History of Ireland*.
Watson : *Rosg Gaidhlig* ; *Scottish Gaelic Verse from the Book of the Dean of Lismore*.

Sinhalese**1954**

(a) *Muvadevdāvata*.

(b) *Vesaturu-dā-sanne* (ed. D. E. Hettiaratchi, 1950), pp. 1-73.

(c) *Daham-saraṇa*, pp. 200-306 (ed. Dhammānanda, 1929).

(d) *Elu Attanagaluvamsaya* (ed. D. Paññāsāra & P. Vimaladhamma, 1931).

(e) *Girā-sandēsa-vivaraṇaya* (ed. Munidāsa Kumāraṇatunga, 2477).

(f) W. A. Silva : *Kālā Haṇḍa*.

In 1954 only, Internal candidates whose mother tongue is not Sinhalese may, if they wish, offer only (a), (c) and (d), on condition that they submit to an oral test, including dictation, reading a text written by hand, and conversation.

1955 and (provisionally) 1956 (For Internal Students only)

To be prescribed.

Spanish**1954****Paper 2**

Oxford Book of Spanish Verse (2nd edition, ed. Fitzmaurice-Kelly) : poems of Garcilaso de la Vega, Luis de León, Fernando de Herrera, San Juan de la Cruz, Luis de Góngora, Lope de Vega, Francisco de Quevedo and *Epístola moral a Fabio*.

- R. Menéndez Pidal : *Flor Nueva de Romances Viejos*.
 Miguel de Cervantes Saavedra : *El celoso extremeño*.
 Lope de Vega : *Peribáñez* (Hachette).
 Tirso de Molina : *El burlador de Sevilla* (Clásicos castellanos).

Paper 3

- Oxford Book of Spanish Verse* (Poems of Duque de Rivas, José de Espronceda, José Zorilla, Gustavo Adolfo Bécquer, Rosalía Castro, Rubén Darío, Antonio Machado, Juan Ramón Jiménez, Federico García Lorca).
 L. Fernández de Moratín : *El sí de las niñas*.
 Juan Valera : *El comendador Mendoza*.
 Benito Pérez Galdós : *El amigo manso*.
 Lucio V. Mansilla : *Una excursión a los indios ranqueles*.

1955 and (provisionally) 1956

Paper 2

- Oxford Book of Spanish Verse* (2nd edition, ed. Fitzmaurice-Kelly) : poems of Garcilaso de la Vega, Luis de León, Fernando de Herrera, San Juan de la Cruz, Luis de Góngora, Lope de Vega, Francisco de Quevedo and *Epístola moral a Fabio*.
 R. Menéndez Pidal : *Flor Nueva de Romances Viejos*.
Lazarillo de Tormes.
 Lope de Vega : *Peribáñez* (Hachette).
 Tirso de Molina : *El burlador de Sevilla* (Clásicos castellanos).

Paper 3

- Oxford Book of Spanish Verse* (Poems of Duque de Rivas, José de Espronceda, José Zorilla, Gustavo Adolfo Bécquer, Rosalía Castro, Rubén Darío, Antonio Machado, Juan Ramón Jiménez, Federico García Lorca).
 L. Fernández de Moratín : *El sí de las niñas*.
 Juan Valera : *Juanita la larga*.
 Benito Pérez Galdós : *El amigo manso*.
 Lucio V. Mansilla : *Una excursión a los indios ranqueles*.

Swedish

1954

- J. L. Runeberg : *Fänrik Ståls sägner*.
 J. A. Strindberg : *Gustav Vasa*.
 E. G. Geijer : *Dikter ; Minnen*.
 *V. von Heidenstam : *Vallfart och vandringsår*.
 *P. Lagerkvist : *Gäst hos verkligheten*.

1955

- J. L. Runeberg : *Fänrik Ståls sägner*.
 J. A. Strindberg : *Gustav Vasa*.
 E. Tegnér : *Frithiofs saga*.
 *V. von Heidenstam : *Vallfart och vandringsår*.
 *S. Siwertz : *Mälarpirater*.

1956 (provisional)

- J. L. Runeberg : *Fänrik Ståls sägner*.
 E. Tegnér : *Frithiofs saga*.
 J. A. Strindberg : *Hemsöborna*.
 *Selma Lagerlöf : *Jerusalem I*.
 *S. Siwertz : *Mälarpirater*.

* Candidates taking Swedish as a subsidiary subject are not required to offer this book.

Tamil

1954, 1955 and (provisionally) 1956

V. Sāminātha Aiyar : *Sangattamiḷum Piṛkālattamiḷum*, I and II.

S. Vaiyapuri Pillai : *Tamiḷ Sudarmanigal*, Vol. I, Essays 3-10 (Kumari Malar, Madras, 18).

Maṇimekalai, Kāḍai 1-10 (ed. Sāminātha Aiyar).

Tirukkural, verses 41-240, with the commentary of Parimēlaḷagar.

Puranānūru, 1-25 (ed. Duraisāmi Pillai).

Kandapurāṇam, Asura Kāṇḍam, Patalams 23-26.

In 1954 only, *Mūvar Ulā*, Kulōtunga Cōlanulā (ed. S. Kaliyānasundara Aiyar).

In 1954 only, Internal candidates whose mother tongue is not Tamil may, if they wish, offer only the first four selections, on condition that they submit to an oral test, including dictation, reading a text written by hand, and conversation.

Telugu

For External Students only.

1954 only

Narasa-bhūpāliyam (V. Ramaswamy Sastrulu, Madras).

Vireśalingam Pantulu : *Lives of the Telugu Poets*, i (Rajamundry).

V. Chinna Sītārāma Śāstri : *Mārgopadeśika*.

Akuṇḍi Veṅkata Śāstri : *Tilakamañjari* (Vizianagram).

Vēdam Veṅkatrāva Śāstrulu : *Nāgānandamu* (Madras).

Theology

1954

(a) *St. Matthew. I Corinthians.*

(d) The Person of Christ.

1955

(a) *I Corinthians. St. John.*

(d) The Work of Christ.

1956 (provisional)

(a) *St. John. Romans.*

(d) The Person of Christ.

Turkish

1954

A. Tietze & S. Lisie : *Türkisches Lesebuch für Ausländer* (Istanbul, 1943).

Baki Süha Ediboğlu : *Türk şiirinden örnekler* (Ankara, 1944).

‘Alī Jānib : *Edebiyyāt* (Istanbul, 1926), pp. 5-7, 31-54, 114-116, 133-137, 160-162, 264-274, 282-306, 340-366.

Neşri Tarihi, I (Ankara, 1949), pp. 58-146.

1955 and (provisionally) 1956

Yaşar Nabi : *Türk edebiyatının en güzel hikâyeleri* (Ankara, 1947).

Baki Süha Ediboğlu : *Türk şiirinden örnekler* (Ankara, 1944).

‘Alī Jānib : *Edebiyyāt* (Istanbul, 1926), pp. 5-7, 31-54, 114-116, 133-143, 264-366.

Neşri Tarihi, I (Ankara, 1949), pp. 146-210.

Urdu**1954**

- (a) Nazir Ahmad : *Taubatu'n-Naṣūh*.
 (b) Altāf Husain Hālī : *Muqaddima*, pp. 113 to the end (Ram Narain Lal edition, 1931).
 (c) Hādī Hasan Ruswā : *Umrāo Jān Adā*.
 (d) Altāf Husain Hālī : *Musaddas i Hālī*.

In 1954 only, Internal candidates whose mother tongue is not Urdu may, if they wish, offer only (a), (b) and (d), on condition that they submit to an oral test, including dictation, reading a text written by hand, and conversation.

1955 and (provisionally) 1956

Nazir Ahmad : *Taubatu'n-Naṣūh*.
 Iqbāl : *Bāng-i-Dirā*, pp. 252-322 (Lahore, 10th edition).
 Hādī Hasan Ruswā : *Umrāo Jān Adā*.
 Altāf Husain Hālī : *Musaddas i Hālī*.

Welsh**For External Students only.****1954****Grammar**

J. Morris-Jones : *A Welsh Grammar*, pp. 192-452.
 Henry Lewis : *Yr Elfen Ladin yn yr Iaith Gymraeg*.

Texts

Pedeir Keinc y Mabinogi (ed. Ifor Williams).
Chwedleu Seith Doethon Rufein (ed. Henry Lewis).
Gwaith Dafydd ap Gwilym (ed. Thomas Parry), pp. 1-224.
Hen Gyflwyniadau (ed. Henry Lewis), pp. 48-87.
Canu Rhydd Cynnar (ed. T. H. Parry-Williams), pp. 108-253.

1955**Grammar**

J. Morris-Jones : *A Welsh Grammar*, pp. 192-452.
 Henry Lewis : *Yr Elfen Ladin yn yr Iaith Gymraeg*.

Texts

Pedeir Keinc y Mabinogi (ed. Ifor Williams).
Chwedlau Odo (ed. Ifor Williams).
Canu Rhydd Cynnar (ed. T. H. Parry-Williams), pp. 1-137.
Gwaith Dafydd ap Gwilym (ed. Thomas Parry), pp. 48-171.
Gwaith Guto'r Glyn (ed. I. Williams & J. Ll. Williams), pp. 1-83.
Rhagymadroddion (ed. Garfield H. Hughes), pp. 1-96.

1956 (provisional)**Grammar**

J. Morris-Jones : *A Welsh Grammar*, pp. 192-452.
 Henry Lewis : *Datblygiad yr Iaith Gymraeg*.

Texts

Pedeir Keinc y Mabinogi (ed. Ifor Williams).
Chwedleu Seith Doethon Rufein (ed. Henry Lewis).
Gwaith Dafydd ap Gwilym (ed. Thomas Parry), pp. 172-295.
Cywyddau Iolo Goch ac Eraill (ed. Lewis, Roberts and Williams), pp. 1-87, 119-142, 253-264.
Canu Rhydd Cynnar (ed. T. H. Parry-Williams), pp. 102-253.
Rhagymadroddion (ed. Garfield H. Hughes), pp. 63-148.

B.A. HONOURS EXAMINATION

Arabic (Classical)

1954, 1955 and (provisionally) 1956

Paper 1

In 1954, *Baḍī' az-Zamān : Maqāmāt* (ed. Muhammad 'Abduh), I-X ;
in 1955 and 1956, *Ibn Hishām : Sirat Rasūl Allāh* (ed. Wüstenfeld),
pp. 719–820.

Selections from the Ṣaḥīḥ of al-Bukhārī (ed. C. C. Torrey, Semitic Study
Series, No. VI, E. J. Brill. Leiden).

Paper 2

Either Th. Nöldeke : *Delectus veterum carminum Arabicorum*,
or Abū Tammām : *Kitāb al-Ḥamāsa*, chapter I (*Bāb al-Ḥamāsa*).
(External candidates must state which option they select.)

Paper 3

al-Qur'ān : Sūras 7–20 (with al-Baidāwī's commentary on Sūra 19).

Paper 4

(a) In 1954, *Riwāyāt al-Aghānī* (Catholic Press, Beirut), Vol. I, pp.
1–151 ; in 1955 and 1956, *Ibn Hauḳal : Opus Geographicum*
(ed. J. H. Kramers, Leiden), pp. 18–107, 132–164.

(d) Conti Rossini : *Chrestomathia arabica meridionalis* (Rome, 1931),
items 1–65.

Paper 10

(b) Hebrew : *Amos* ; *Psalms* 1–8 ; *I Kings*, chap. 16, v. 29 to *II Kings*,
chap. 17 incl.
Aramaic : *Daniel*, chapters 2–7.

(c) Persian : Sa'dī : *Gulistān*, *Muqaddima*.
Narshakhī : *Tārīkhī Bukhārā*, 69–117.
Ghazālī : *Naṣīḥat ul-Mulūk* (ed. Jalāl Humā'ī, Tehrān, 1315–17),
pp. 1–101.

(d) Turkish : E. J. W. Gibb : *History of Ottoman Poetry*, Vol. VI,
pp. 21–25 (*Mevlid*).
Alī Jānib : *Edebīyāt* (Istanbul, 1926), pp. 260–280 (*Eski nesir*).
A. Adnan-Adıvar : *Osmanlı Türklerinde ilim* (Istanbul, 1943),
pp. 105–138.

History of Art

Paper 3

1954

Vasari : *Lives* (trans. G. du C. de Vere) : the Prefaces, etc., on pp.
xiii–lix ; the Author's Prefaces to Parts II and III of the *Lives* ;
Part I : Cimabue, Giotto ; Part II: Masaccio, Brunelleschi, Dona-
tello ; Part III: Leonardo, Raphael, Michelangelo.

Condivi : *Life of Michelangelo* (trans. C. Holroyd).

Ghiberti : *Commentaries* (External Students may obtain a translation
from the External Registrar).

Ridolfi : *Life of Tintoretto* (External Students may obtain a translation
from the External Registrar).

A. Dürer : *Records of Journeys to Venice and the Low Countries* (trans.
R. Tombo, ed. R. Fry, or in M. Conway : *Literary Remains of*
A. Dürer).

1955 and (provisionally) 1956

Paper 3

Vasari : *Lives* (trans. G. du C. de Vere) : the Prefaces, etc., on pp. xiii–lix ; the Author's Prefaces to Parts II and III of the *Lives* ; Part I : Cimabue, Giotto ; Part II : Masaccio, Brunelleschi, Donatello ; Part III : Leonardo, Raphael, Michelangelo.

Condivi : *Life of Michelangelo* (trans. C. Holroyd).

Ghiberti : *Commentaries* (External Students may obtain a translation from the External Registrar).

Ridolfi : *Life of Tintoretto* (External Students may obtain a translation from the External Registrar).

Papers 7, 8, 9, Special Period

(a) Byzantine

1. Didron : *Manuel d'Iconographie Chrétienne* (Paris, 1845), pp. 71–205, i.e. “ Sur les neuf choeurs des Anges ” to “ La Descente du Saint-Esprit.”
2. A. Vogt : *Le Livre des Cérémonies de Constantin Porphyrogénètes* (Paris, 1935), Chapter I and the commentary on it, i.e. pp. 5–78. Text alone also printed in J. P. Migne : *Patrologiae Cursus Completus*, Series Greca, Vol. 112 (Paris, 1864).

(b) Carolingian and Romanesque

1. Mortet : *Recueil de Textes relatifs à l'Histoire de l'Architecture*, Tome I, pp. 206–228 (Gervase of Canterbury). Translation published by The Friends of Canterbury Cathedral (Christ Church Gateway, Canterbury, 1/-) as *Canterbury Papers* No. 3, “ Of the Burning and Repair of the Cathedral Church of Canterbury in the year 1174 : from the Latin of Gervase a Monk.” Ed. C. Cotton (3rd edition).
2. Abbot Suger (ed. Panofsky, 1946) : “ De Administratione ” and “ De Consecratione ”, pp. 40–110, line 27 ; or in Schlosser : *Quellenbuch zur Kunstgeschichte des Abendländischen Mittelalters* (i.e. *Quellenschriften zur Kunstgeschichte* ed. Eitelberger-Ilg. Neue Folge, Band VII (Vienna, 1896), pp. 268–290) ; or in J. P. Migne, *Patrologiae Cursus Completus*, Series Latina, Vol. 186 (Paris, 1854).
3. St. Bernard, Schlosser, *ibid.*, pp. 266–268 ; or in Migne, *ibid.*, Vol. 182 (col. 914c–916b) (External Students may obtain a copy from the External Registrar).

(c) Gothic

1. Abbot Suger (ed. Panofsky, 1946) : “ De Administratione ” and “ De Consecratione ”, pp. 40–110, line 27, or in Schlosser : *Quellenbuch zur Kunstgeschichte des Abendländischen Mittelalters* (i.e. *Quellenschriften zur Kunstgeschichte* ed. Eitelberger-Ilg. Neue Folge, Band VII (Vienna, 1896), pp. 268–290) ; or in J. P. Migne : *Patrologiae Cursus Completus*, Series Latina, Vol. 186 (Paris, 1854).
2. Mortet : *Recueil de Textes relatifs à l'Histoire de l'Architecture*, Tome I, pp. 206–228 (Gervase of Canterbury). Translation published by The Friends of Canterbury Cathedral (Christ Church Gateway, Canterbury, 1/-) as *Canterbury Papers* No. 3, “ Of the Burning and Repair of the Cathedral Church of Canterbury in the year 1174 : from the Latin of Gervase a Monk.” Ed. C. Cotton (3rd edition).

3. Contracts for tomb of Richard II in Rymer : *Foedera*, Vol. vii (London, 1709), De Tumba Marmorea, pro Anna nuper Regina, pp. 795, 796, and De Imaginibus et apparatu pro tumba nuper Regina, pp. 797, 798 (External Students may obtain a copy from the External Registrar).
- (d) 17th Century
 1. Bellori : *Le Vite de' Pittori, Scultori e Architetti Moderni* (Rome, 1672 ; available in modern facsimile) : L'Idea, pp. 3-13 ; Life of Poussin, pp. 407-462.
 2. J. Burckhardt : *Rubens* (Phaidon edition, London, 1950), Selected letters, pp. 191-249.
- (e) c. 1700-c. 1830
 1. Winckelmann : *Gedanken über die Nachahmung der griechischen Werke in der Malerei und Bildhauerkunst in Kleine Schriften und Briefe*, I (Leipzig, 1925), pp. 59-105.
 2. Diderot : *Oeuvres Complètes*, X, Salon of 1763, pp. 159-226.
- (f) c. 1830 to the Present Day
 1. Delacroix : *Journals* (ed. Joubin, Paris, 1932), I, Voyage au Maroc, pp. 120-159 ; or in the less reliable edition of P. Flat (Paris, 1893), I, pp. 145-197.
 2. Van Gogh : *Letters to his brother* (London, 1927), I, pp. 57-317.

Bengali

For Internal Students only.

1954

Vanga Sahitya Parichaya (D.C. Sen) :—

- (a) Ketakādās Kṣemānanda, pp. 259-285.
 - (b) Kavikaṅkan-Canḍi, pp. 338-368.
 - (c) Kāśidāśi Mahābhārata, pp. 664-690.
 - (d) Canḍidāser Srikṣṇakirttan, pp. 963-968.
 - (e) Canḍidāser Padāvali, pp. 968-1002.
 - (f) Bhāratcandrer Annadāmaṅgal, pp. 1449-1467.
 - (g) Rāmprasādi Gān, pp. 1522-1538.
 - (h) Rājā Rāmmohan Rāyer Bāṅgla Racanā, pp. 1753-1764.
 - (i) Īśvaracandra Gupter Bāṅgālā Gadya, pp. 1809-1816.
 - (j) Akṣaya Kumār Datter Strīśikṣar Prayojana, pp. 1816-1819.
- Madhusūdan Datta : *Meghanāda Badha Kāvya*, Canto 4.
- Nabīncandra Sen : *Amitābha*.
- Rabīndranāth Ṭhākur : *Saṅcayitā* (5th ed.), pp. 27-79 and 186-224 ; *Galpa Guccha*, Part III.
- Baṅkimcandra Caṭṭopādhyāya : *Kamalākānter Daptar*.
- Śaratcandra Caṭṭopādhyāya : *Pallī-Samāj*.

1955 and (provisionally) 1956

Vanga Sahitya Parichaya (D. C. Sen) :—

- (a) Ketakādās Kṣemānanda, pp. 259-285.
- (b) Kavikaṅkan-Canḍi, pp. 338-368.
- (c) Kāśidāśi Mahābhārata, pp. 664-690.
- (d) Canḍidāser Srikṣṇakirttan, pp. 963-968.
- (e) Canḍidāser Padāvali, pp. 968-1002.
- (f) Bhāratcandrer Annadāmaṅgal, pp. 1449-1467.
- (g) Rāmprasādi Gān, pp. 1522-1538.
- (h) Rājā Rāmmohan Rāyer Bāṅgla Racanā, pp. 1753-1764.

- (i) Īśvaracandra Guṭṭer Bāṅgālā Gadya, pp. 1809–1816.
 (j) Akṣaya Kumār Datter Strīśikṣar Prayojana, pp. 1816–1819.
 Madhusūdana Datta : *Meghanāda Badha Kāvya*, Canto I.
 Rabīndranāth Ṭhākura :—

1. *Saṅcayitā* (5th ed.), pp. 27–79 ;
2. *Galpa Guccha*, Part III ;
3. *Visarjana*.

Baṅkimcandra Caṭṭopādhāya : *Devi Caudhurāṇī*.
 Śaratcandra Caṭṭopādhāya : *Pallī-Samāja*.
 Vibhūti Bandopādhāya : *Pather Pāñcālī*.

Burmese

For Internal Students only.

1954, 1955 and (provisionally) 1956

Myazedi Inscription (Burmese face only).

Minwaing Kyaung Inscription.

Shin Maharathasara : *Kogan Pyo*, Section I, *Hatthipāla Taw Htwet Hkan*.

Seinda Kyawthu : *Yadus*.

U Kala : *Mahā Yāzawin gyi*, Vol. I, Sections 4, 5 and 6.

U Hpyaw : *Paleiksa Egyin*.

U Shun, Sameikkon-sa : *Ummādanti Pyo*.

U Pok Ni : *Kummāra Pya Zat*, pp. 10–48.

Selections from the Anthology of Burmese Literature, with Notes by Maung Chit Saya, Rangoon, 1926.

Ledi Sayadaw, Agga Mahā Pandita : *Pyinthit Kālakattā Pokhsā Withizzanā Kyan*.

Celtic

For External Students only.

1954

A. Welsh

Prose :—

The Mabinogi, Gereint ac Enid and Kulhwch ac Olwen from *The White Book Mabinogion* (ed. J. G. Evans).

Brut Dingestow (ed. Henry Lewis), pp. 1–86.

Llyfr Blegywryd (ed. Williams & Powell), pp. 39–92.

Hystoria Lucidar from *The Elucidarium and Other Texts* (ed. Rhys & Morris-Jones).

Ystorya de Carolo Magno (ed. S. J. Williams), pp. 43–111.

Verse :—

Canu Aneirin (ed. Ifor Williams), lines 1–149, 178–242.

Canu Llywarch Hen (ed. Ifor Williams), pp. 1–32.

The Black Book of Carmarthen (ed. J. G. Evans), pp. 1–8, 18–63.

Llawysgrif Hendregadredd (ed. Morris-Jones & Parry-Williams), pp. 1–16, 161–8, 315–320.

Gwaith Dafydd ap Gwilym (ed. Thomas Parry).

B. Irish and Scottish Gaelic

Strachan : *Old Irish Paradigms and Selections from the Old Irish Glosses* (revised O. Bergin, 1949), pp. 103–136.

R. Thurneysen : *Old Irish Reader* (trans. Binchy & Bergin, 1949), pp. 2–44.

Strachan : *Stories from the Táin* (revised O. Bergin, 1944).

F. Shaw : *The Dream of Oengus* (Browne & Nolan, 1934).

- R. Thurneysen : *Scéla Mucce Meic Dathó* (Stationery Office, Dublin, 1935).
 E. Knott : *An Introduction to Irish Syllabic Poetry* (Cork University Press, 1928)
 T. F. O'Rahilly : *Measgra Dánta*, Parts 1 and 2 (Cork University Press, 1927).

1955

A. Welsh

Prose :—

- The *Mabinogi*, *Kulhwch ac Olwen* and *Breudwyd Maxen* from *The White Book Mabinogion* (ed. J. G. Evans).
Brut Dingestow (ed. Henry Lewis), pp. 144-208.
Llyfr Blegywryd (ed. Williams & Powell), pp. 1-39.
Buched Dewi and *Buched Beuno* from *The Elucidarium and Other Texts* (ed. Rhys & Morris-Jones).
Ystorya de Carolo Magno (ed. S. J. Williams), pp. 43-111.

Verse :—

- Canu Aneirin* (ed. Ifor Williams), lines 1-149, 353-406.
Canu Llywarch Hen (ed. Ifor Williams), pp. 23-50.
The Black Book of Carmarthen (ed. J. G. Evans), pp. 18-63.
Llawysgrif Hendregadredd (ed. Morris-Jones & Parry-Williams), pp. 1-16, 161-8, 315-320.
Gwaith Dafydd ap Gwilym (ed. Thomas Parry).

B. Irish and Scottish Gaelic

- Strachan : *Old Irish Paradigms and Selections from the Old Irish Glosses* (revised O. Bergin, 1949), pp. 103-136.
 R. Thurneysen : *Old Irish Reader* (trans. Binchy & Bergin, 1949), pp. 2-44.
 Strachan : *Stories from the Táin* (revised O. Bergin, 1944).
 F. Shaw : *The Dream of Oengus* (Browne & Nolan, 1934).
 R. Thurneysen : *Scéla Mucce Meic Dathó* (Stationery Office, Dublin, 1935).
 E. Knott : *An Introduction to Irish Syllabic Poetry* (Cork University Press, 1928).
 T. F. O'Rahilly : *Measgra Dánta*, Parts 1 and 2 (Cork University Press, 1927).

1956 (provisional)

A. Welsh

Prose :—

- Historia Peredur*, *Kulhwch ac Olwen* and *Kyvranc Llud a Llevelis* from *The White Book Mabinogion* (ed. J. G. Evans).
Brut Dingestow (ed. Henry Lewis), pp. 1-144.
Llyfr Blegywryd (ed. Williams & Powell), pp. 39-78.
Ystorya de Carolo Magno (ed. S. J. Williams), pp. 1-41.
Buched Dewi and *Hystoria Adrian ac Ipotis* from *The Elucidarium and Other Texts* (ed. Rhys & Morris-Jones).

Verse :—

- Canu Aneirin* (ed. Ifor Williams), lines 1-104, 353-427, 640-673.
Canu Llywarch Hen (ed. Ifor Williams), pp. 1-22.
The Black Book of Carmarthen (ed. J. G. Evans), pp. 47-69.
Ymddiddan Myrddin a Thaliesin (ed. C. O. H. Jarman).
Llawysgrif Hendregadredd (ed. Morris-Jones & Parry-Williams), pp. 1-16, 161-168, 315-320.
Gwaith Dafydd ap Gwilym (ed. Thomas Parry), pp. 1-312, 388-413.

B. Irish and Scottish Gaelic

- Strachan : *Old Irish Paradigms and Selections from the Old Irish Glosses* (revised O. Bergin, 1949), pp. 103-136.
 R. Thurneysen : *Old Irish Reader* (trans. Binchy & Bergin, 1949), pp. 2-44.
 Strachan : *Stories from the Táin* (revised O. Bergin, 1944).
 F. Shaw : *The Dream of Oengus* (Browne & Nolan, 1934).
 R. Thurneysen : *Scéla Mucce Meic Dathó* (Stationery Office, Dublin, 1935).
 E. Knott : *An Introduction to Irish Syllabic Poetry* (Cork University Press, 1928).
 T. F. O'Rahilly : *Measgra Dánta*, Parts 1 and 2 (Cork University Press, 1927).

Central European Regional Studies

1954 and until further notice

Papers 9 and 10, Special Subject

- (a) The Reform Movement in Bohemia, 1346-1415.

To be studied in the following authorities :—

- (a) Matthiae de Janow : *Regulae Veteris et Novi Testamenti* (ed. Kybal, V., Prague, 1908-13), Vol. I, pp. 1-50 ; Vol. IV, pp. 1-63 ; Vol. III, pp. 358-67. (*Narratio de Milicio ; Milicii Libellus de Antichristo*).
 (b) *M. Jana Husi Korespondence a Dokumenty*, Nos. 124-6, 129-32, 139-41, 164-5 (ed. Novotný, V., Prague, 1920).
 (c) Mladoňovic : *Relatio Magistri Johannis Hus*, in **Documenta Magistri Johannis Hus* (ed. Palacký, F.), pp. 273-323.
 (d) *Processus Iudiciarius contra Jeronimum de Praga, habitus Viennae a. 1410-12* (ed. Klicman, L., Prague, 1898).
 (e) Poggius Bracciolini : *De Hieronymi Pragensis obitu et supplicio epistola* (in Palacký, F. : **Documenta Mag. Johannis Hus*).

- (c) Poland, 1733-1795.

To be studied in the following authorities :—

- (a) Konarski, Stanislaw : *O skutecznym rad sposobie*, in the edition by Konopczynski, Wladyslaw : *Wybór pism politycznych* (Cracow, 1922), pp. 59-290.
 (b) Klotz, Justine : *L'Oeuvre législative de la Diète de quatre ans* (Paris, 1913) (the documents on pp. 501-48).
 (c) Kilowicz, J. : *Opis obyczajów za panowania Augusta III*, ed. by R. Pollak, *Biblioteka narodowa*, ser. I, no. 88, Wrocław, 1951 : chapters IV, pp. 180-218 ; IV, pp. 218-287 ; VI, pp. 517-539 ; VI, pp. 539-560 ; VI, pp. 589-607.

The following books are also recommended :—

- Kutrzeba, Stanislaw : *Historia ustroju polskiego*, Vol. I, pp. 259-322 (Cracow, 1931).
 Balzer, Oswald : *Konstytucja Trzeciego Maja, reformy społeczne polityczne ustawy rządowej z r. 1791* (3rd ed., Cracow, 1907).
 Klotz, Justine : *L'Oeuvre législative de la Diète de quatre ans* (Paris, 1913), IIème partie, pp. 149-501.
 Lord, R. H. : *The Second Partition of Poland : a study in diplomatic history* (Harvard Historical Series, vol. 23). Introduction, and chapters 1 and 9 (Cambridge, Mass., 1915).
 Rose, W. J. : *Stanislaw Konarski, reformer of education in XVIIIth century Poland* (London, 1929).

Chinese (Classical)

1954, 1955 and (provisionally) 1956

Paper 1

Ch'un ch'iu, *Tso chuan*, Duke Hsiang, Years 28–31, and Duke Chao, Years 1–3, 7–8 and 25–32.

Paper 2

T'ang Sung pa (ta) chia wên : Books I and XXVII.

Paper 3

Mencius : Books I–IV.

Paper 4 (a)

Han Fei Tzû : Books I (chapters 1–5) and the first two chapters of Book II (chapters 6–7) (numbering in accordance with the edition by Wang Hsien-shên, followed in the translation by W. K. Liao in *The Complete Works of Han Fei Tzû*, Vol. I, London, 1939).

Paper 4 (b)

Murakami Saitaroo : *Zisyuu-zyuken-kanbun-kaisyaku no zyuuten* (Hoobundoo, Tōkyō), Nos. 1, 3, 7, 24, 33, 34, 38, 44, 71, 72, 111, 160, 248, 258, 280, 321.

Paper 7 (a)

History of the T'ang Dynasty (A.D. 618–906).

Paper 8 (in 1953 only)

Literature of the T'ang Dynasty (A.D. 618–906).

Chinese (Modern)

1954, 1955 and (provisionally) 1956

Paper 1

Mencius : Book I, Part I ; Book IV, Part I.

Analects : Books I, II and VII.

Paper 2

Horngloumenq (*Hung Lou Mêng*), chapters I–V, and either *Shishiangjih* (*Hsi Hsiang Chi*), Book I (Prelude and Acts I–IV), or *Chuenchiou*, *Tzuoojuann* (*Ch'un ch'iu*, *Tso chuan*) : Duke Jau (Chao), Years 1–3, 7–8, 25–32, or *Tarng Song ba (dah) jia wen* (*T'ang Sung pa (ta) chia wên*), Book I.

(External candidates must state which option they select.)

Paper 3

Hwu Shyh Wentswen (*Hu Shih Wên Ts'un*) (Shanghai, Ya Tung Press), Vol. III, pp. 1–10, and Vol. IV, pp. 1–11, 151–164 ; and either Vol. III, pp. 200–249, or Murakami Saitaroo : *Zisyuu-zyuken-kanbun-kaisyaku no zyuuten* (Hoobundoo, Tōkyō), Nos. 1, 3, 7, 24, 35, 50, 72, 90, 137, 145, 151, 193, 262 and 280.

(External candidates must state which option they select.)

Classics

The texts used by the examiners in setting the examination papers will be the Oxford Classical Texts (Clarendon Press) unless some other text is specified.

1954, 1955 and (provisionally) 1956

A. Latin Books

- (1) Virgil : *Eclogues* ; *Georgics*, Books I and IV ; *Aeneid*, Books IV, VI–VIII, XII.
- (2) Horace, omitting *Satires*, Book I.
- (3) Lucretius : Books I, III, V ; Catullus.
- (4) Plautus : *Amphitryo* ; *Captivi* ; *Rudens* ; *Trinummus*.
- (5) Cicero : *Philippic* II ; *Pro Cluentio* (in 1954 only) ; *Pro Caelio* (in 1955 and 1956) ; *In C. Verrem Actio Prima* ; *Letters* (ed. How), 2–12, 14–17, 19, 21–23, 26–32, 40, 42–44, 46, 48–51, 54–56, 58, 60, 65, 70, 72, 75, 76, 88.
- (6) Livy : Books XXI, XXII, XXIII, 1–32, 4.
- (7) Tacitus : *Annals*, Books XIII–XVI.

B. Greek Books

- (a) Homer : *Iliad*, Books I, III, XXII–XXIV ; *Odyssey*, Books X–XIV
- (b) Three tragic plays :—
 Either Sophocles : *Œdipus Coloneus* ; *Œdipus Tyrannus*
 Antigone,
 or Euripides : *Medea* ; *Iphigeneia in Tauris* ; *Bacchae*¹.
 (External candidates must state which option they select.)
- (c) Aristophanes : *Frogs* ; *Clouds* ; *Birds*.
- (d) Pindar : *Pythians* ; *Olympians*.
- (e) Theocritus, Bion and Moschus.
- (f) Thucydides : Books V–VII.
- (g) Herodotus : Books V–VII.
- (h) Plato : *Phaedo* ; *Gorgias*.
- (i) Demosthenes : *De Corona* ; *In Cononem* ; *In Calliclem* ; *Philippic* III.

Roman Historical Subject

Either The Principates of Augustus and Tiberius, 30 B.C. to A.D. 37
or Roman History from 133 to 70 B.C.

(External candidates must state which option they select.)

Greek Historical Subject

Greek History from 500 to 433 B.C.

Comparative Philology of the Greek and Latin Languages

Greek : C. D. Buck : *Introduction to the Study of the Greek Dialects*, revised edition (Ginn & Co.), Nos. 18–22, 25, 28 (lines 1–24), 33, 38–40, 43 (lines 1–65), 50, 55 (omitting lines 15–32), 56–58, 60, 66 (lines 1–40), 74 (lines 1–54), 75–80¹, 110 (IV, 25 to V, 9).

Latin : H. Ernout : *Recueil de textes latins archaïques* (Paris, Klincksieck), Part I, omitting Nos. 3, 136, 137, 139–146.

Czech and Slovak Language and Literature

1955 and until further notice

Paper 5

1. *The Alexandreid* : *Die alttschechische Alexandreis* (ed. Reinhold Trautmann, C. Winter, Heidelberg, 1916) : the whole of Jindřichohradecký zlomek, pp. 32–38 (492 lines).

¹ No textual criticism is required for this book.

2. Tomáš Štítný : *Řeči nedělní a svátsční* (ed. J. Straka, Prague, 1929, pubd. by the Czech Academy of Sciences and Arts) : (a) the poem on pp. 275–6 and the sentence preceding it ; (b) the story of St. Clement and the lame illiterate of Rome, pp. 215–16.
3. Komenský : *Labyrint světa a ráj srdce* : (a) Chapters II–VII inclusive, pp. 193–205 of *Veškeré spisy J. A. Komenského*, Volume 15, ed. J. Novák, Brno, 1910, pubd. by the Central League of Teachers' Unions in Moravia ; (b) Chapter X, pp. 218–226 of the same volume.
4. Jan Kollár : *Slávy dcera* (ed. J. Jakubec, pubd. Otta, Prague, 1903) : The prelude ; Sonnets as follows : Sála, numbers 8, 12, 19, 28, 64, 66, 67, 116 ; Labe, numbers 86, 89, 111, 137, 139 ; Dunaj, numbers 7, 62, 110 ; Lethe, numbers 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 28, 32, 100, 103, 123 ; Acheron, numbers 43, 50, 61, 73, 78, 111.
5. J. Palacký : Critique of Erben's " Poklad " in *Časopis českého musea*, Vol. I, year 1838, pp. 121–3.
6. F. L. Čelakovský : *Ohlas písní českých* (Orbis, Prague).
7. K. H. Mácha : *Máj*.
8. Havlíček : *Slovan a Čech*.

Papers 7 and 8 (a), Special subject

1. The Czech-Slovak literary controversy.
2. The Czech historical novel with special reference to Jirásek, and reading of " Mezi proudy ", " Proti všem ", " Bratrstvo ", and " Temno ", with extracts from " F. L. Věk ".

Dutch

1954

(a) Old English :—

Sweet : *Anglo-Saxon Reader* (10th edition, 1946, or 11th edition, 1948, or 12th edition, 1950), extract IV, *The Voyages of Ohthere and Wulfstan* ; VIII, *Alfred's Wars with the Danes* ; IX, *Bede's Account of the Coming of the Angles, Saxons and Jutes* ; X, *Bede's Account of the Poet Cædmon*.

Beowulf (ed. Wyatt & Chambers), lines 1–924, 2200–end.

Old High German :—

Braune : *Althochdeutsches Lesebuch* (10th edition, 1942, or 11th edition, 1949), XX Tatian : *John* I, 1–5, *Luke* I, 26–38 ; XXVIII *Hildebrandslied* ; XXIX *Wessobrunner Gebet* ; XXXII Otfrid 19 (V.24) *Oratio* ; XXXVI *Ludwigslied*.

(These texts are also to be found in Werner Burkhard : *Kleines Althochdeutsches Lesebuch*, Francke, Bern.)

Old Saxon :—

F. Holthausen : *Altsächsisches Elementarbuch* (C. Winter, Heidelberg), all extracts.

(c) Middle Dutch :—

C. C. de Bruin : *Middelnederlands geestelijk proza* (Thieme), extracts 30, 32A, 33, 34.

Esmoreit (Tjeenk Willink, Zwolle).

(e) Modern Texts :—

A. J. de Jong : *Een viertal dichters en prozaschrijvers uit de Vroeg-Renaissance* (Tjeenk Willink, Zwolle): all extracts by Coornhert.

Hooft : *Geeraerd van Velsen* (Tjeenk Willink, Zwolle).

Vondel : *Lucifer* (Thieme or Tjeenk Willink).

Potgieter : *Florence* (ed. Duyfhuizen, Mees, Santpoort).

Multatuli : *Max Havelaar* (ed. G. Stuiveling, Van Oorschot, Amsterdam).
 Perk : *Mathilde-krans* (ed. G. Stuiveling).
 Verwey : *Cola Rienzi* (Versluys, Amsterdam).
 Streuvels : *De Oogst* (Veen, Amsterdam).

1955

(a) Old English :—

Sweet : *Anglo-Saxon Reader* (10th edition, 1946, or 11th edition, 1948, or 12th edition, 1950), extracts IV, *The Voyages of Ohthere and Wulfstan* ; VIII, *Alfred's Wars with the Danes* ; IX, *Bede's Account of the Coming of the Angles, Saxons and Jutes* ; X, *Bede's Account of the Poet Cædmon*.
Beowulf (ed. Wyatt & Chambers), lines 1-924, 2200-3182.

Old High German :—

Braune : *Althochdeutsches Lesebuch* (10th edition, 1942, or 11th edition, 1949), XX Tatian : *John IV*, 4-42 ; XXVIII *Hildebrandslied* ; XXXI *Merseburger Zaubersprüche* ; XXXII Otfrid : 14 *Iesus fatigatus ex itinere*, lines 1-60.
 (These texts are also to be found in Werner Burkhard : *Kleines Althochdeutsches Lesebuch*, Francke, Bern).

Old Saxon :—

F. Holthausen : *Altsächsisches Elementarbuch* (C. Winter, Heidelberg)—all extracts.

(c) Middle Dutch :—

C. C. de Bruin : *Middelnederlands geestelijk proza* (Thieme), extracts 30, 32A, 33, 34.
Gloriant, ed. L. J. Olivier (Meulenhoff).

(e) Modern Dutch :—

A. J. de Jong : *Een viertal dichters en prozaschrijvers uit de Vroeg-Renaissance* (Tjeenk Willink, Zwolle) : all extracts by Coornhert.
 Hooft : *Geeraerd van Velsen* (Tjeenk Willink, Zwolle).
 Vondel : *Joseph in Dothan* (ed. De Vooy, Meulenhoff).
 Staring : *Poëzie* (Tweede Bundel), ed. J. H. van den Bosch (Tjeenk Willink, Zwolle).
 Bosboom-Toussaint : *De Delftsche Wonderdokter* (ed. H. H. Broekstra, Meulenhoff).
 Perk : **Either** *Mathilde-Krans* (ed. G. Stuiveling, Boucher, The Hague), **or** *Gedichten* (ed. H. A. Mulder, Van Schaik, Pretoria).
 Verwey : *Cola Rienzi* (Versluys, Amsterdam).
 Van der Leeuw : *Verhalen en verzen* (ed. C. Ypes, Meulenhoff).

1956 (provisional)

(a) Old English :—

Sweet : *Anglo-Saxon Reader* (10th edition, 1946, or 11th edition, 1948, or 12th edition, 1950), extracts IV, *The Voyages of Ohthere and Wulfstan* ; VIII, *Alfred's Wars with the Danes* ; IX, *Bede's Account of the Coming of the Angles, Saxons and Jutes* ; X, *Bede's Account of the Poet Cædmon*.
Beowulf (ed. Wyatt & Chambers), lines 1-924, 2200-3182.

Old High German :—

Braune : *Althochdeutsches Lesebuch* (10th edition, 1942, or 11th edition, 1949), XX Tatian : *John IV*, 4-42 ; XXVIII *Hildebrandslied* ; XXXI *Merseburger Zaubersprüche* ; XXXII Otfrid : 14 *Iesus fatigatus ex itinere*, lines 1-60.

(These texts are also to be found in Werner Burkhard : *Kleines Althochdeutsches Lesebuch*, Francke, Bern).

Old Saxon :—

F. Holthausen : *Altsächsisches Elementarbuch* (C. Winter, Heidelberg)—all extracts.

(c) Middle Dutch :—

Van den vos Reinaerde (ed. J. W. Muller), lines 1751-2558.
Gloriant, ed. L. J. Olivier (Meulenhoff).

(e) Modern Dutch :—

A. J. de Jong : *Een viertal dichters en prozaschrijvers uit de Vroeg-Renaissance* (Tjeenk Willink, Zwolle) : all extracts by Van Mander.

Hooft : *Uit de Nederlandsche Historiën*, "Het Epos van den Prins" (ed. A. Zijderveld & J. de Rek, Meulenhoff).

Vondel : *Joseph in Dothan* (ed. De Vooys, Meulenhoff).

Staring : *Poëzie* (Tweede Bundel), ed. J. H. van den Bosch (Tjeenk Willink, Zwolle).

Bosboom-Toussaint : *De Delftsche Wonderdokter* (ed. H. H. Broekstra, Meulenhoff).

H. Roland Holst : *De Nieuwe Geboort* (Brusse, Rotterdam).

Van der Leeuw : *Verhalen en verzen* (ed. C. Ypes, Meulenhoff).

A. van Schendel : *De Waterman* (Nygh & Van Ditmar, Rotterdam).

English

1954

Paper (a)

Sweet : *Anglo-Saxon Reader* (10th edition, Oxford University Press, 1946, or 11th edition, 1948, or 12th edition, 1950): extracts II, *On the State of Learning in England* ; IV, *The Voyages of Ohthere and Wulfstan* ; XV, *Ælfric's Life of King Oswald* ; XXI, *The Battle of Maldon* ; XXVI, *The Wanderer* ; XXXII.D, *Mercian Hymns—Canticum de Vit* (from *Deuteronomy xxxii*) ; XXXIII.B, *Kentish Charters—Abba*, 835.

Sweet : *First Middle English Primer*, pp. 32-40 (*Ancrene Riwe*).

Bruce Dickins & R. M. Wilson : *Early Middle English Texts* (Bowes & Bowes, Cambridge) : II, *The Peterborough Chronicle for 1137* ; XV, *Ormulum*, lines 1-78, *The Dedication*.

Sisam : *Fourteenth Century Verse and Prose*, extract III.

Chaucer : *Parlement of Foules*, lines 1-301.

Chambers & Daunt : *London English*, pp. 18-31.

Shakespeare : *Love's Labour's Lost*, Act V, scene 1, *Satis quod sufficit . . . to our sport away*, pp. 153-155 ; *Coriolanus*, Act III, scene 1, *Tullus Aufidius . . . Pray you let's to him*, pp. 630-633.

(To be studied in the First Folio text ; the pagination given above is from the Oxford Facsimile, which is recommended).

Paper (b)

Beowulf.

Sweet : *Anglo-Saxon Reader* (10th edition, Oxford University Press, 1946, or 11th edition, 1948, or 12th edition, 1950): extracts II, *On the State of Learning in England* ; IV, *The Voyages of Ohthere and Wulfstan* ; VIII, *Alfred's Wars with the Danes* ; X, *Bede's*

Account of the Poet Cædmon ; XV, *Ælfric's Life of King Oswald* ; XVI, *Wulfstan's Address to the English* ; XXI, *The Battle of Maldon* ; XXII, *The Fall of the Angels* ; XXIII, *Judith* ; XXV, *Dream of the Rood* ; XXVI, *The Wanderer* ; XXVII, *The Seafarer*.

(The above texts are prescribed for translation and subject-matter, interpretation, forms (including metre) and expression. The text of *Beowulf* used by the examiners in setting the examination paper will be that of Wyatt & Chambers.)

Paper (c)

Sweet : *First Middle English Primer*, pp. 19-41 (*Ancrene Riwe*).

Bruce Dickins & R. M. Wilson : *Early Middle English Texts* (Bowes & Bowes, Cambridge) : II, *Peterborough Chronicle* for 1137 ; VI, Layamon's *Brut*, lines 1-67, 21739-90, 28526-28651 ; XXIII-XXXVII, Lyric Poetry.

Chaucer : *Parlement of Foules*.

Langland : *Piers Plowman*, Prologue, lines 1-145, Passus I and V, B Text.

Sir Gawain and the Green Knight (ed. Tolkien & Gordon).

(In *Sir Gawain and the Green Knight* passages for translation will be chosen only from Parts I and IV).

Paper (g)

Love's Labour's Lost ; *Richard II* ; *Othello* ; *Measure for Measure* ; *Coriolanus*.

Paper (h), Special Subject

The Development of the Drama and Theatre :—

(b) (i) and (ii) The complete plays of Henrik Ibsen.

English Literature from 1880 to the present day :—

(b) The work of Conrad, Hardy, and Yeats.

American Literature :—

Henry James ; Poe ; Whitman.

Old English in relation to Gothic and other Germanic Languages :—

Old English :—

Sweet, *Second Anglo-Saxon Reader* : Rushworth Gloss on *Matthew VI* ; Durham Gloss (Lindisfarne Gospels) on *Matthew VI*.

Bright, *West Saxon Gospels* : *Matthew VI*.

Gothic :—

Wright, *Grammar of the Gothic Language* : *St. John* ; *Second Epistle to Timothy* ; *Matthew VI*.

Old Norse :—

E. V. Gordon, *An Introduction to Old Norse* : I, pp. 1-17 ; II ; IV ; p. 163, Runic Inscriptions 1 and 2.

Old Saxon :—

F. Holthausen, *Altsächsisches Elementarbuch* (Heidelberg, 1921) : *Heliand*, pp. 206-215 ; *Genesis*, pp. 215-224.

Old High German :—

Braune, *Althochdeutsches Lesebuch* (Halle, Saale, 1942) : XVI (1, 2, 4, 11, 14, 15), Tatian ; XXIII (1, 2, 3, 4), Notker ; XXXII (5, 8, 10), Otfrid ; XXX, *Muspilli* ; XXXVI, *Das Ludwigslied*.

Old Icelandic :—

E. V. Gordon : *An Introduction to Old Norse*, extracts I, II, III, V, VI, VII, VIII, X, XI, XIII.

Gunnlaugssaga (edition published by the Viking Society).

Völundarkviða, *Atlakviða*.

Old Saxon and Old High German :—

F. Holthausen, *Altsächsisches Elementarbuch* (Heidelberg, 1921), pp. 201–224 : *Heliand*, *Genesis*, and minor pieces.

Braune, *Althochdeutsches Lesebuch* (Halle, Saale, 1942) : Prose : II, *Paternoster und credo* ; XVI (1, 2, 4, 11, 14, 15), *Tatian* ; XXIII (1–11), *Notker* ; XXV, *Physiologus* ; XXVII, *Wessobrunner Predigt*. Poetry : VII, *Ambrosianische Hymnen* ; XXVIII, *Das Hildebrandslied* ; XXX, *Muspilli* ; XXXII (5, 8, 10, 11), *Otfrid* ; XXXIV, *Christus und die Samariterin* ; XXXVI, *Das Ludwigslied* ; XXXXII, *Memento Mori*.

The Classical Background to English Literature :—

(i) The Epic. **Either** Homer : *Odyssey*, Book VI, **or** Virgil : *Aeneid*, Book IV.

(ii) Satire and Epigrams. **Either** :—

1. The following poems, as in *either* : J. W. Mackail : *Select Epigrams from the Greek Anthology* (Longmans) ; *or* : *The Oxford Book of Greek Verse* :—

Mackail :—

Oxford Book :—

Section I : 8, 9, 16, 18, 21, 39, 40, 52, 61.

524, 665, 581, 580, 660, 589, 671, 584, 582.

Section III : 1–2, 4, 6, 9, 10, 11–12, 13, 15, 17, 18, 24, 27, 34, 36, 49, 55, 58, 61, 62, 65, 67.

214, 212, 215 (i), 268, 211, 443, 269, 688, 446, 444, 217 (ii), 590, 618, 516, 563, 564, 577, 221, 515, 675, 514.

Section IV : 4, 8, 12, 13, 17, 30, 32.

566, 672, 491, 408, 586, 513, 621.

Section V : 6.

550.

Section VI : 16, 18, 19, 21, 24.

608, 493, 596, 565, 489.

Section VIII : 7.

445 (i).

Section IX : 8, 18.

525, 448.

Section XI : 4, 8, 9, 20, 28, 30, 37, 40, 42, 52, 53.

677, 678, 547, 217 (iii), 614, 527, 545, 218, 585, 676, 445 (ii).

Section XII : 22, 24, 27, 30, 32, 36, 37, 47.

481, 641, 546, 611, 620, 643, 642, 644.

2. Lucian : *Menippus*.

or :—

The following Latin poems :—

Horace : *Satires*, Book I, 5, 9, 10.

Juvenal : *Satires*, X.

Martial : *Epigrams*, Book I, 1–20, 109–118.

Catullus : 1–5, 12–14, 70–73, 83–86, 92, 93, 101.

(External candidates must state which subjects they select.)

Paper (j)

As for Paper (h), Special Subject Old Icelandic.

1955

Paper (a)

Sweet : *Anglo-Saxon Reader* (12th edition, Oxford University Press, 1950): extracts II, *On the State of Learning in England*; IV, *The Voyages of Ohthere and Wulfstan*; XV, *Ælfric's Life of King Oswald*; XXVI, *The Wanderer*; XXXII.D, *Mercian Hymns—Canticum de Vit* (from *Deuteronomy xxxii*); XXXIII.B, *Kentish Charters—Abba*, 835.

The Battle of Maldon (Methuen's Old English Library).

Sweet : *First Middle English Primer*, pp. 32–40 (*Ancrene Riwe*).

Bruce Dickins & R. M. Wilson : *Early Middle English Texts* (Bowes & Bowes, Cambridge): II, *The Peterborough Chronicle* for 1137; XV, *Ormulum*, lines 1–78, *The Dedication*.

Sisam : *Fourteenth Century Verse and Prose*, extract III.

Chaucer : *Parlement of Foules*, lines 1–301.

Chambers & Daunt : *London English*, pp. 18–31.

Shakespeare : *Love's Labour's Lost*, Act V, scene 1, *Satis quod sufficit . . . to our sport away*, pp. 153–155; *Cymbeline*, Act II, scene 1, *Was there ever man . . . this great land*, pp. 883–884; Act II, scene 4, *Feare it not Sir . . . with all my heart*, pp. 886–887; Act III, scene 3, *A goodly day . . . The game is up*, pp. 889–890.

(To be studied in the First Folio text; the pagination given above is from the Oxford Facsimile, which is recommended.)

Paper (b)

Beowulf.

Sweet : *Anglo-Saxon Reader* (12th edition, Oxford University Press, 1950): extracts II, *On the State of Learning in England*; IV, *The Voyages of Ohthere and Wulfstan*; X, *Bede's Account of the Poet Cædmon*; XV, *Ælfric's Life of King Oswald*; XXII, *The Fall of the Angels*; XXVI, *The Wanderer*; XXVII, *The Seafarer*.

Methuen's Old English Library : *The Parker Chronicle* (892–896); *The Dream of the Rood*; *Sermo Lupi ad Anglos*; *The Battle of Maldon*.

(The above texts are prescribed for translation and subject-matter, interpretation, forms (including metre) and expression. The text of *Beowulf* used by the examiners in setting the examination paper will be that of Klaeber (3rd edition, with supplement, 1941).)

Paper (c)

Sweet : *First Middle English Primer*, pp. 19–41 (*Ancrene Riwe*).

Bruce Dickins & R. M. Wilson : *Early Middle English Texts* (Bowes & Bowes, Cambridge): II, *Peterborough Chronicle* for 1137; VI, *Layamon's Brut*, lines 1–67, 21739–90, 28526–28651; XI, *The Bestiary*.

Chaucer : *Parlement of Foules*.

Sisam : *Fourteenth Century Verse and Prose*, extracts VI, VIII.

Sir Gawain and the Green Knight (ed. Tolkien & Gordon).

(In *Sir Gawain and the Green Knight* passages for translation will be chosen only from Parts I, II and IV.)

Paper (g)

Richard III; *Love's Labour's Lost*; *As You Like It*; *Othello*; *Cymbeline*.

Paper (h), Special Subject

The Development of the Drama and Theatre :—

(b) (i) and (ii) The complete plays of Henrik Ibsen.

English Literature from 1880 to the present day :—

(b) The work of Henry James and Yeats.

American Literature :—

Henry James ; Poe ; Whitman.

Old English in relation to Gothic and other Germanic Languages :—

Old English :—

Sweet, *Second Anglo-Saxon Reader* : Rushworth Gloss on *Matthew VI* ; Durham Gloss (Lindisfarne Gospels) on *Matthew VI*.

Bright, *West Saxon Gospels* : *Matthew VI*.

Gothic :—

Wright, *Grammar of the Gothic Language* : *St. John* ; *Second Epistle to Timothy* ; *Matthew VI*.

Old Norse :—

E. V. Gordon, *An Introduction to Old Norse* : I, pp. 1-17 ; II ; IV ; p. 163, Runic Inscriptions 1 and 2.

Old Saxon :—

F. Holthausen, *Altsächsisches Elementarbuch* (Heidelberg, 1921) : *Heliand*, pp. 206-215 ; *Genesis*, pp. 215-224.

Old High German :—

Braune, *Althochdeutsches Lesebuch* (Halle, Saale, 1942) : XVI (1, 2, 4, 11, 14, 15), Tatian ; XXIII (1, 2, 3, 4), Notker ; XXXII (5, 8, 10), Otfrid ; XXX, *Muspilli* ; XXXVI, *Das Ludwigslied*.

Old Icelandic :—

E. V. Gordon, *An Introduction to Old Norse*, extracts I, II, III, V, VI, VII, VIII, X, XI, XIII.

Gunnlaugssaga (edition published by the Viking Society).

Völundarkviða, *Atlakviða*.

Old Saxon and Old High German :—

F. Holthausen, *Altsächsisches Elementarbuch* (Heidelberg, 1921), pp. 201-224 : *Heliand*, *Genesis*, and minor pieces.

Braune, *Althochdeutsches Lesebuch* (Halle, Saale, 1942) : Prose : II, *Paternoster und credo* ; XVI (1, 2, 4, 11, 14, 15), Tatian ; XXIII (1-11), Notker ; XXV, *Physiologus* ; XXVII, *Wessobrunner Predigt*. Poetry : VII, *Ambrosianische Hymnen* ; XXVIII, *Das Hildebrandslied* ; XXX, *Muspilli* ; XXXII (5, 8, 10, 11), Otfrid ; XXXIV, *Christus und die Samariterin* ; XXXVI, *Das Ludwigslied* ; XXXXII, *Memento Mori*.

The Classical Background to English Literature :—

(i) Drama. **Either** Euripides : *Hippolytus*, **or** Plautus : *Amphitryo*.

(ii) Satire and Epigrams. **Either** :—

1. The following poems, as in *either* : J. W. Mackail : *Select Epigrams from the Greek Anthology* (Longmans) ; **or** : *The Oxford Book of Greek Verse* :—

Mackail :—

Section I : 8, 9, 16, 18, 21, 39,
40, 52, 61.

Oxford Book :—

524, 665, 581, 580,
660, 589, 671, 584,
582.

Section III :	1-2, 4, 6, 9, 10, 11-12, 13, 15, 17, 18, 24, 27, 34, 36, 49, 55, 58, 61, 62, 65, 67.	214, 212, 215 (i), 268, 211, 443, 269, 688, 446, 444, 217 (ii), 590, 618, 516, 563, 564, 577, 221, 515, 675, 514.
Section IV :	4, 8, 12, 13, 17, 30, 32.	566, 672, 491, 408, 586, 513, 621.
Section V :	6.	550.
Section VI :	16, 18, 19, 21, 24.	608, 493, 596, 565, 489.
Section VIII :	7.	445 (i).
Section IX :	8, 18.	525, 448.
Section XI :	4, 8, 9, 20, 28, 30, 37, 40, 42, 52, 53.	677, 678, 547, 217 (iii), 614, 527, 545, 218, 585, 676, 445 (ii).
Section XII :	22, 24, 27, 30, 32, 36, 37, 47.	481, 641, 546, 611, 620, 643, 642, 644.

2. Lucian : *Menippus*.

or :—

The following Latin poems :—

Horace : *Satires*, Book I, 5, 9, 10.Juvenal : *Satires*, X.Martial : *Epigrams*, Book I, 1-20, 109-118.

Catullus : 1-5, 12-14, 70-73, 83-86, 92, 93, 101.

(External candidates must state which subjects they select.)

Paper (j)

As for Paper (h), Special Subject Old Icelandic.

1956 (provisional)

Paper (a)

Sweet : *Anglo-Saxon Reader* (12th edition, Oxford University Press, 1950) : extracts II, *On the State of Learning in England* ; IV, *The Voyages of Ohthere and Wulfstan* ; XV, *Ælfric's Life of King Oswald* ; XXVI, *The Wanderer* ; XXXII.D, *Mercian Hymns—Canticum de Vit* (from *Deuteronomy xxxii*) ; XXXIII.B, *Kentish Charters—Abba*, 835.

The Battle of Maldon (Methuen's Old English Library).

Sweet : *First Middle English Primer*, pp. 32-40 (*Ancrene Riwe*).

Bruce Dickins & R. M. Wilson : *Early Middle English Texts* (Bowes & Bowes, Cambridge) : II, *The Peterborough Chronicle for 1137* ; XV, *Ormulum*, lines 1-78, *The Dedication*.

Sisam : *Fourteenth Century Verse and Prose*, extract III.

Chaucer : *Parlement of Foules*, lines 1-301.

Chambers & Daunt : *London English*, pp. 18-31.

Shakespeare : *Cymbeline*, Act III, scene 3, *A goodly day. . . . The game is up*, pp. 889-890 ; Act IV, scene 2, line 282—the end, *We have done our obsequies . . . happier to arise*, pp. 897-898 ; *Hamlet*, Act I, scene 2, lines 1-106, *Though yet of Hamlet. . . . This must be so*, pp. 761-762 ; Act V, scene 1, lines 31-239, *Come, my spade . . . here comes the King*, pp. 785-786.

(To be studied in the First Folio text; the pagination given above is from the Oxford Facsimile, which is recommended.)

Paper (b)

Beowulf.

Sweet : *Anglo-Saxon Reader* (12th edition, Oxford University Press, 1950) : extracts I, *Cynewulf and Cyneheard* ; II, *On the State of Learning in England* ; IV, *The Voyages of Ohthere and Wulfstan* ; X, *Bede's Account of the Poet Cædmon* ; XV, *Ælfric's Life of King Oswald* ; XVI, *Wulfstan's Address to the English* ; XXII, *The Fall of the Angels* ; XXVI, *The Wanderer* ; XXVII, *The Seafarer*.

Methuen's Old English Library : *The Parker Chronicle* (892-896) ; *The Dream of the Rood* ; *Judith* ; *The Battle of Maldon*.

(The above texts are prescribed for translation and subject-matter, interpretation, forms (including metre) and expression. The text of *Beowulf* used by the examiners in setting the examination paper will be that of Klaeber (3rd edition, with supplement, 1941).)

Paper (c)

Sweet : *First Middle English Primer*, pp. 19-41 (*Ancrene Riwe*).

Bruce Dickins & R. M. Wilson : *Early Middle English Texts* (Bowes & Bowes, Cambridge) : II, *Peterborough Chronicle* for 1137 ; VI, *Layamon's Brut*, lines 1-67, 21739-90, 28526-28651 ; XI, *The Bestiary*.

Chaucer : *Parlement of Foules*.

Sisam : *Fourteenth Century Verse and Prose*. extracts VI, VIII.

Sir Gawain and the Green Knight (ed. Tolkien & Gordon).

(In *Sir Gawain and the Green Knight* passages for translation will be chosen only from Parts I, II and IV.)

Paper (g)

Richard III ; *As You Like It* ; *Hamlet* ; *Cymbeline*.

Paper (h), Special Subject

The Development of the Drama and Theatre :—

(b) (i) Shaw ; (ii) The Irish Dramatic Movement to 1910.

English Literature from 1880 to the present day :—

(b) The work of Henry James and Virginia Woolf.

American Literature :—

Whitman ; Melville ; O'Neill.

Old English in relation to Gothic and other Germanic Languages :—

Old English :—

Sweet, *Second Anglo-Saxon Reader* : Rushworth Gloss on *Matthew VI* ; Durham Gloss (Lindisfarne Gospels) on *Matthew VI*.

Bright, *West Saxon Gospels* : *Matthew VI*.

Gothic :—

Wright, *Grammar of the Gothic Language* : *St. John* ; *Second Epistle to Timothy* ; *Matthew VI*.

Old Norse :—

E. V. Gordon, *An Introduction to Old Norse* : I, pp. 1-17 ; II ; IV ; p. 163, Runic Inscriptions 1 and 2.

Old Saxon :—

F. Holthausen, *Altsächsisches Elementarbuch* (Heidelberg, 1921) : *Heliand*, pp. 206-215 ; *Genesis*, pp. 215-224.

Old High German :—

Braune, *Althochdeutsches Lesebuch* (Halle, Saale, 1942) : XVI (1, 2, 4, 11, 14, 15), Tatian ; XXIII (1, 2, 3, 4), Notker ; XXXII (5, 8, 10), Otfrid ; XXX, *Muspilli* ; XXXVI, *Das Ludwigslied*.

Old Icelandic :—

E. V. Gordon, *An Introduction to Old Norse*, extracts I, II, III, V, VI, VII, VIII, X, XI, XIII.

Gunnlaugssaga (edition published by the Viking Society).
Völundarkviða, *Atlakviða*.

Old Saxon and Old High German :—

F. Holthausen, *Altsächsisches Elementarbuch* (Heidelberg, 1921), pp. 201–224 : *Heliand*, *Genesis*, and minor pieces.

Braune, *Althochdeutsches Lesebuch* (Halle, Saale, 1942) : Prose : XXIII (1–11), Notker ; XXV, *Physiologus* ; XXVII, *Wessobrunner Predigt*. Poetry : VII, *Ambrosianische Hymnen* ; XXVIII, *Das Hildebrandslied* ; XXX, *Muspilli* ; XXXII (5, 8, 10, 11), Otfrid ; XXXIV, *Christus und die Samariterin* ; XXXVI, *Das Ludwigslied* ; XXXXII, *Memento Mori*.

The Classical Background to English Literature :—

- (i) Drama. **Either** Euripides : *Hippolytus*, **or** Plautus : *Amphitryo*.
- (ii) Lyric. **Either** Pindar : *Olympians* I–VIII (ed. either Bowra, O.U.P., or Sandys, Loeb), **or** Horace : *Odes*, Book III (ed. either Wickham, O.U.P., or Bennett, Loeb).

(External candidates must state which subjects they select.)

Paper (j)

As for Paper (h), Special Subject Old Icelandic.

French

1954

Le Roman de Renart, Branch I (ed. Mario Roques, C.F.M.A.), lines 1–744 and 940–1600.

Le Charroi de Nîmes (C.F.M.A.).

Du Bellay : *Les Regrets* (1–138) ; *Les Antiquitez de Rome* (1–32).

Montaigne : *Essays* (ed. P. Villey, Félix Alcan, or Garnier, or Plattard, Les Textes Français, or Thibaudet, Pléiade edition) :

Book I : *De l'Institution des Enfants*.

Book II : *Des Livres*.

Book III : *De Trois Commerces*.

Special Subjects

I. The Elements of Romance Philology.

Candidates should have an acquaintance with the whole field, but particularly with the evolution and characteristics of Provençal, Spanish and Italian. They will have an opportunity of showing a knowledge of all three of these languages, but may, if they wish, concentrate upon any two. Illustrative texts will be selected from the following :—

- Provençal :— *La Chanson de Sainte Foy d'Agen* (ed. A. Thomas, C.F.M.A.), lines 1-109.
 Martín de Riquer : *La Lírca de los Trovadores*, Tome I (Barcelona, 1948), Nos. I, 7 ; IV, 4 ; XIII, 11 ; XXI, 11. (These texts are also available in Carl Appel : *Provenzalische Chrestomathie* (6th ed., Leipzig, 1930), as Nos. 10, 15, 17, 35, and in Audiau et Lavaud : *Nouvelle Anthologie des Troubadours* (Delagrave, 1928), as Nos. II, V, X, XXXIV.)
- Spanish :— J. D. M. Ford : *Old Spanish Readings* (Ginn & Co., 4th ed., 1939), pp. 13-20 (*La Gesta de Myo Cid*).
- Italian :— Dionisotti & Grayson : *Early Italian Texts* (Blackwell, 1949), Nos. I-XIII, XV, XVI.
- II. Les Romans d'Aventure, with special study of :—
Galeran de Bretagne.
 Jean Renart : *Guillaume de Dôle*.
La Châtelaine de Vergy.
 Philippe de Remy : *Jehan et Blonde*.
 Jean Maillart : *Le Comte d'Anjou*.
- III. Rabelais.
- IV. Racine.
- V. Rousseau, with special study of *Discours sur les origines de l'inégalité parmi les hommes* ; *Lettre à M. d'Alembert sur les Spectacles* (Droz) ; *Emile* ; *Les Confessions* ; *Rêveries du Promeneur Solitaire* (ed. Textes Français Modernes).
- VI. Stendhal, with special study of *Le Journal* ; *Le Rouge et le Noir* ; *La Chartreuse de Parme* ; *La Vie de Henri Brulard*.
- VII. Marcel Proust, with a special study of *Du côté de chez Swann* ; *A l'ombre des jeunes filles en fleurs* ; *Le temps retrouvé*.

(External candidates must state which subject they select.)

1955

- Le Roman de Renart*, Branch I (ed. Mario Roques, C.F.M.A.), lines 1-744 and 940-1600.
- Jean Bodel : *Le Jeu de Saint Nicolas* (ed. Warne, Blackwell's French Texts).
- Rabelais : *Le Tiers Livre* (ed. Plattard).
- Montaigne : *Essays* (ed. P. Villey, Félix Alcan, or Plattard, Les Textes Français, or Thibaudet, Pléiade edition) : Book I : *De l'Institution des Enfants*.
 Book II : *Des Livres*.
 Book III : *De Trois Commerces*.

Special Subjects

I. The Elements of Romance Philology.

Candidates should have an acquaintance with the whole field, but particularly with the evolution and characteristics of Provençal, Spanish and Italian. They will have an opportunity of showing a knowledge of all three of these languages, but may, if they wish, concentrate upon any two. Illustrative texts will be selected from the following :—

Provençal :—*La Chanson de Sainte Foy d'Agen* (ed. A. Thomas, C.F.M.A.), lines 1–109.

Martín de Riquer : *La Lírca de los Trovadores*, Tome I (Barcelona, 1948), Nos. I, 7 ; IV, 4 ; XIII, 11 ; XXI, 11. (These texts are also available in Carl Appel : *Provenzalische Chrestomathie* (6th ed., Leipzig, 1930), as Nos. 10, 15, 17, 35, and in Audiau et Lavaud : *Nouvelle Anthologie des Troubadours* (Delagrave, 1928), as Nos. II, V, X, XXXIV.)

Spanish :— J. D. M. Ford : *Old Spanish Readings* (Ginn & Co., 4th ed., 1939), pp. 13–20 (*La Gesta de Myo Cid*).

Italian :— Dionisotti & Grayson : *Early Italian Texts* (Blackwell, 1949), Nos. I–XIII, XV, XVI.

II. Les Romans de la Table Ronde, with special study of :—

Chrétien de Troyes : *Yvain*.

Bérout : *Tristan*.

Marie de France : *Lais* : *Lanval* and *Chevrefoil*.

La Queste del Saint-Graal and *La Mort Artu*.

III. Ronsard (to be studied in the 1584 text, as edited by G. Cohen, Edition de la Pléiade, 2 vols.).

IV. Racine.

V. Rousseau, with special study of *Discours sur les origines de l'inégalité parmi les hommes* ; *Lettre à M. d'Alembert sur les Spectacles* (Droz) ; *Emile* ; *Les Confessions* ; *Rêveries du Promeneur Solitaire* (ed. Textes Français Modernes).

VI. Baudelaire, with special study of :—

Les Fleurs du Mal (all poems included in third edition, 1868).

Les Paradis Artificiels.

Petits poèmes en prose.

The following essays from *Curiosités esthétiques* and *l'Art romantique* :—

Salon de 1846.

Exposition universelle 1855.

Salon de 1859.

Le Peintre de la vie moderne.

Théophile Gautier (1859).

Richard Wagner et Tannhäuser à Paris.

Réflexions sur quelques-uns de mes contemporains.

VII. Three 20th century authors—André Malraux, Antoine de Saint-Exupéry, Albert Camus—with special study of :—

Malraux : *La Condition humaine* ; *L'Espoir* ; *Les Noyers de L'Altenburg*.

Saint-Exupéry : *Vol de nuit* ; *Terre des hommes* ; *Le petit Prince*.

Camus : *L'Etranger* ; *Le Mythe de Sisyphe* ; *La Peste*.

1956 (provisional)

Le Couronnement de Louis, lines 1–2010 (C.F.M.A.).

Jean Bodel : *Le Jeu de Saint Nicolas* (ed. Warne, Blackwell's French Texts).

Rabelais : *Le Tiers Livre* (ed. Plattard).

Marot : *Epîtres* (ed. C. A. Mayer, Droz) : Nos. IX, *A. M. Bouchard* ; X, *A son amy Lyon* ; XI, *Au Roy pour le deslivrer de prison* ; XII, *Au Roy pour succeder en l'estat de son père* ; XIX, *A celluy qui l'injurie* ;

XXIV, *Au Roy pour avoir esté desrobé* ; XXXIII, *A Madame de Ferrare* ; XXXIV, *Au Roy du temps de son exil à Ferrare* ; XL, *A Mme. de Soubise* ; XLVI, *A Mgr. le Daulphin* ; XLIII, *Epistre de Venise à Mme. de Ferrare* ; XLVII, *A Mgr. le Cardinal de Tournon* ; LI, *A une Damoysele malade*.

Special Subjects

I. The Elements of Romance Philology.

Candidates should have an acquaintance with the whole field, but particularly with the evolution and characteristics of Provençal, Spanish and Italian. They will have an opportunity of showing a knowledge of all three of these languages, but may, if they wish, concentrate upon any two. Illustrative texts will be selected from the following :—

Provençal :— *La Chanson de Sainte Foy d'Agen* (ed. A. Thomas, C.F.M.A.), lines 1–109.

Martín de Riquer : *La Lírca de los Trovadores*, Tome I (Barcelona, 1948), Nos. I, 7 ; IV, 4 ; XIII, 11 ; XXI, 11. (These texts are also available in Carl Appel : *Provenzalische Chrestomathie* (6th ed., Leipzig, 1930), as Nos. 10, 15, 17, 35, and in Audiau et Lavaud : *Nouvelle Anthologie des Troubadours* (Delagrave, 1928), as Nos. II, V, X, XXXIV.)

Spanish :— J. D. M. Ford : *Old Spanish Readings* (Ginn & Co., 4th ed., 1939), pp. 13–20 (*La Gesta de Myo Cid*).

Italian :— Dionisotti & Grayson : *Early Italian Texts* (Blackwell, 1949), Nos. I–XIII, XV, XVI.

II. Les Romans de la Table Ronde, with special study of :—

Chrétien de Troyes : *Yvain*.

Bérout : *Tristan*.

Marie de France : *Lais* : *Lanval* and *Chevrefoil*.

La Queste del Saint-Graal and *La Mort Artu*.

III. Ronsard (to be studied in the 1584 text, as edited by G. Cohen, Edition de la Pléiade, 2 vols.).

IV. Comedy in the Seventeenth Century, with special study of :—

Corneille : *Mélite*, *La Galerie du Palais*, *L'Illusion comique*, *Le Menteur*.

Rotrou : *Les Sosies*, *La Sœur*.

Scarron : *Dom Japhet d'Arménie*.

Molière : *L'Ecole des Maris*, *L'Ecole des Femmes*, *Don Juan*, *L'Amour médecin*, *Le Misanthrope*, *Le Médecin malgré lui*, *Le Tartuffe*, *Amphitryon*, *L'Avare*, *George Dandin*, *Le Bourgeois Gentilhomme*, *Les Fourberies de Scapin*, *La Comtesse d'Escarbagnas*, *Les Femmes Savantes*, *Le Malade Imaginaire*.

Racine : *Les Plaideurs*.

V. Voltaire, with special study of *Lettres philosophiques* ; *Traité de Métaphysique* (ed. H. Temple Paterson, Manchester University Press) ; *Zaïre* ; *Zadig* ; *Micromégas* ; *Candide* ; *Le Siècle de Louis XIV* ; *Correspondance* (ed. Garnier, 2 vols.).

VI. Baudelaire, with special study of :—

Les Fleurs du Mal (all poems included in third edition, 1868).

Les Paradis Artificiels.

Petits poèmes en prose.

The following essays from *Curiosités esthétiques* and *l'Art romantique* :—

Salon de 1846.

Exposition universelle 1855.

Salon de 1859.

Le Peintre de la vie moderne.

Théophile Gautier (1859).

Richard Wagner et Tannhäuser à Paris.

Réflexions sur quelques-uns de mes contemporains.

VII. Three 20th century authors—André Malraux, Antoine de Saint-Exupéry, Albert Camus—with special study of :—

Malraux : *La Condition humaine* ; *L'Espoir* ; *Les Noyers de L'Altenburg*.

Saint-Exupéry : *Vol de nuit* ; *Terre des hommes* ; *Le petit Prince*.

Camus : *L'Etranger* ; *Le Mythe de Sisyphe* ; *La Peste*.

German

1954

(a) Old High German :—

Braune : *Althochdeutsches Lesebuch* (10th edition, 1942, or 11th edition, 1949) ; XX Tatian : *John I, 1-5, Luke I, 26-38* ; XXVIII *Hildebrandslied* ; XXIX *Wessobrunner Gebet* ; XXXII Otfrid 19 (V. 24) *Oratio* ; XXXVI *Ludwigslied*.

(These texts are also to be found in Werner Burkhard : *Kleines Althochdeutsches Lesebuch*, Francke, Bern.)

(b) Middle High German :—

Nibelungenlied, VI, XVI, XVII, XXXVIII, XXXIX.

Tristan (ed. Closs, Blackwell), lines 16683-17278.

Minnesang (ed. Wehrli) : extracts from Spervogel Anonymus, Spervogel, Morungen, Reinmar, Wolfram von Eschenbach.

(d) Early New High German :—

Anthologie de l'Allemand du XVI^e Siècle (ed. Gravier, Bibliothèque de Philologie Germanique, XI, Paris, Aubier, 1948), pp. 78-86, 263-308.

Prescribed Modern Texts :—

Herder : *Journal meiner Reise*.

Goethe : *Faust I* ; *Die Leiden des jungen Werthers*.

Schiller : *Wallenstein*.

Grillparzer : *Ein Bruderzwist in Habsburg*.

Hebbel : *Poems* (Blackwell, when published ; or in any available edition of Hebbel's works).

Rilke : *Neue Gedichte*.

Optional Subjects :—

(ii) (a) Old Saxon :—F. Holthausen : *Altsächsisches Elementarbuch* (C. Winter, Heidelberg)—all extracts.

Old High German :—Braune : *Althochdeutsches Lesebuch* (10th edition, 1942, or 11th edition, 1949):—V *Gespräch* ; VI *St. Galler Paternoster und Credo* ; VII *Aus der Interlinearversion der Benedictinerregel* ; VIII *Aus Isidors Schrift Contra Judaeos* ; IX *Aus den Monsee-Wiener Fragmenten* ; X *Exhortatio ad Plebem Christianam* ; XII *Freisinger Paternoster* ; XIII *Weissenburger Katechismus* ;

XIV *Fränkisches Gebet* ; XVI *Das Fränkische Taufgelöbniß* ; XX *Aus dem Tatian* ; XXI *Die Strassburger Eide* ; XXII *Beichten* ; XXIII *Notker : Aus Boethius, I (Item prologus teutonice) ; Aus dem Martianus Capella, 10 (Item de eius habitu et forma and Luna), 11 (Pluto et Neptunus, Stix et Proserpina, Mars et Liber and Hercules) ; Aus der Psalmenübersetzung, 13 (Psalm 136, 6-9 aus dem alten Baseler Bruchstück), 14 (Psalm 1 aus der St. Galler Handschrift) ; XXIV Aus Williram ; XXV Aus dem älteren Physiologus ; XXVI Otlohs Gebet ; XXVII Wessobrunner Predigt ; XXVIII Das Hildebrandslied ; XXIX Das Wessobrunner Gebet ; XXX Muspilli ; XXXI Segensformeln ; XXXII Aus Otfrids Evangelienbuch : 7 (I, 5) *Missus est Gabrihel angelus*, 8 (I, 6) *Exurgens autem Maria abiit in montana*, 14 (II, 14) *Iesus fatigatus ex itinere* ; XXXIII *Petruslied* ; XXXIV *Christus und die Samariterin* ; XXXV *Lied vom heiligen Georg* ; XXXVI *Das Ludwigslid* ; XXXVII *Gebete* ; XXXIX *De Heinrico* ; XL *Verse aus Notkers Rhetorik* ; XLI *Merigarto* ; XLII *Memento Mori* ; XLIII *Ezzos Gesang*.*

(ii) (b) Old Norse :—E. V. Gordon : *An Introduction to Old Norse* : Extracts I, II, VII, VIII, IX, X, XV.
Eddic Poems : *Reginismál, Fáfnismál, Sigurðarkviða hin meiri, Helreið Brynhildar, Atlakviða, Gunnlaugs Saga*.

(ii) (c) Middle Low German :—*Das Redentiner Osterspiel* (W. Stammler edition).
P. Jørgensen : *Middelnedertyske Tekster til Universitetsbrug* (Gad, Copenhagen, 1946).

(ii) (d) Middle Dutch :—*Historie van Troyen*, lines 3069-3219 (Segher's *Dits tpriiel van Troyen*, second passage).
Karel ende Elegast, lines 1182-1414.
Van den vos Reinaerde, lines 1-477.
Hadewijch : *Lied V, Lied XXIV, Brief X*.
Jan van Ruusbroec : passages from *Die Chierheit der geesteliker Brulocht* in C. C. de Bruin : *Middelnederlands geestelijk proza*, p. 72 and p. 73 down to "ende vlieghe in gods verborghtheit."
Jacob van Maerlant : *Van den lande van oversee*.

(iv) (For Internal Students only) Stylistic analysis and interpretation of texts :—Lessing's plays.

1955

(a) Old High German :—

Braune : *Althochdeutsches Lesebuch* (10th edition, 1942, or 11th edition, 1949), XX *Tatian : John IV, 4-42* ; XXVIII *Hildebrandslied* ; XXXI *Merseburger Zaubersprüche* ; XXXII *Otfrid 14 (II. 14) Iesus fatigatus ex itinere*, lines 1-60.

(These texts are also to be found in Werner Burkhard : *Kleines Althochdeutsches Lesebuch*, Francke, Bern).

(b) Middle High German :—

Erec, lines 8896-9609.

Minnesang (ed. Wehrli) : extracts from Spervogel Anonymus, Spervogel, Morungen, Reinmar, Wolfram von Eschenbach

(d) Early New High German :—

Anthologie de l'Allemand du XVIe Siècle (ed. Gravier, Bibliothèque de Philologie Germanique, XI, Paris, Aubier, 1948), pp. 78–86, 263–308.

Prescribed Modern Texts :—

Herder : *Journal meiner Reise*.

Goethe : *Faust I* ; *Egmont*.

Schiller : *Wallenstein*.

Hölderlin : *Hyperion*.

Heine : *Letzte Gedichte*.

Rilke : *Neue Gedichte*.

Optional Subjects :—

- (ii) (a) Old Saxon :—F. Holthausen : *Altsächsisches Elementarbuch* (C. Winter, Heidelberg)—all extracts.

Old High German :—Braune : *Althochdeutsches Lesebuch* (10th edition, 1942, or 11th edition, 1949) :—V *Gespräche* ; VI *St. Galler Paternoster und Credo* ; VII *Aus der Interlinearversion der Benedictinerregel* ; VIII *Aus Isidors Schrift Contra Judaeos* ; IX *Aus den Monsee-Wiener Fragmenten* ; X *Exhortatio ad Plebem Christianam* ; XII *Freisinger Paternoster* ; XIII *Weissenburger Katechismus* ; XIV *Fränkisches Gebet* ; XVI *Das Fränkische Taufgelöbnis* ; XX *Aus dem Tatian* ; XXI *Die Strassburger Eide* ; XXII *Beichten* ; XXIII *Notker : Aus Boethius, 1 (Item prologus teutonice) ; Aus dem Martianus Capella, 10 (Item de eius habitu et forma and Luna), 11 (Pluto et Neptunus, Stix et Proserpina, Mars et Liber and Hercules) ; Aus der Psalmenübersetzung, 13 (Psalm 136, 6–9 aus dem alten Baseler Bruchstück), 14 (Psalm 1 aus der St. Galler Handschrift) ; XXIV Aus Williram ; XXV Aus dem älteren Physiologus ; XXVI Otlohs Gebet ; XXVII Wessobrunner Predigt ; XXVIII Das Hildebrandslied ; XXIX Das Wessobrunner Gebet ; XXX Muspilli ; XXXI Segensformeln ; XXXII Aus Otfrids Evangelienbuch : 7 (I, 5) *Missus est Gabrihel angelus*, 8 (I, 6) *Exurgens autem Maria abiit in montana*, 14 (II, 14) *Iesus fatigatus ex itinere* ; XXXIII *Petruslied* ; XXXIV *Christus und die Samariterin* ; XXXV *Lied vom heiligen Georg* ; XXXVI *Das Ludwigslied* ; XXXVII *Gebete* ; XXXIX *De Heinricho* ; XL *Verse aus Notkers Rhetorik* ; XLI *Merigarto* ; XLII *Memento Mori* ; XLIII *Ezzos Gesang*.*

- (ii) (b) Old Norse :—E. V. Gordon : *An Introduction to Old Norse* : Extracts I, II, VII, VIII, IX, X, XV.

Eddic Poems : *Reginismál, Fáfnismál, Sigurðarkviða hin meiri, Helreið Brynhildar, Atlakviða*.

Gunnlaugs Saga.

- (ii) (c) Middle Low German :—*Das Redentiner Osterspiel* (W. Stammler edition).

P. Jørgensen : *Middelnedertyske Tekster til Universitetsbrug* (Gad, Copenhagen, 1946).

- (ii) (d) Middle Dutch :—*Historie van Troyen*, lines 3069–3219 (Segher's *Dits tprieel van Troyen*, second passage).

Karel ende Elegast, lines 1182–1414.

Van den vos Reinaerde, lines 1–477.

Hadewijch : Lied V, Lied XXIV, Brief X.

Jan van Ruusbroec : passages from *Die Chierheit der geesteliker Brulocht* in C. C. de Bruin : *Middelnederlands geestelijk proza*, p. 72 and p. 73 down to "ende vlieghe in gods verborghentheit."

Jacob van Maerlant : *Van den lande van oversee*.

- (iv) (For Internal Students only) Stylistic analysis and interpretation of texts :—Lessing's plays.

1956 (provisional)

- (a) Old High German :—

Braune : *Althochdeutsches Lesebuch* (10th edition, 1942, or 11th edition, 1949), XX Tatian : *John IV*, 4-42 ; XXVIII *Hildebrandslied* ; XXXI *Merseburger Zaubersprüche* ; XXXII Otfrid 14 (II. 14) *Iesus fatigatus ex itinere*, lines 1-60.

(These texts are also to be found in Werner Burkhard : *Kleines Althochdeutsches Lesebuch*, Francke, Bern).

- (b) Middle High German :—

Erec, lines 8896-9609.

Walther von der Vogelweide : *Selections* (ed. Richey, Blackwell).

- (d) Early New High German :—

Anthologie de l'Allemand du XVIe Siècle (ed. Gravier, Bibliothèque de Philologie Germanique, XI, Paris, Aubier, 1948), pp. 185-233.

Prescribed Modern Texts :—

Lessing : *Laokoon*.

Goethe : *Faust I* ; *Egmont*.

Schiller : *Maria Stuart*.

Hölderlin : *Hyperion*.

Heine : *Letzte Gedichte*.

Thomas Mann : *Königliche Hoheit*.

Optional Subjects :—

- (ii) (a) Old Saxon :—F. Holthausen : *Altsächsisches Elementarbuch* (C. Winter, Heidelberg)—all extracts.

Old High German :—Braune : *Althochdeutsches Lesebuch* (10th edition, 1942, or 11th edition, 1949):—V *Gespräche*; VI *St. Galler Paternoster und Credo* ; VII *Aus der Interlinearversion der Benedictinerregel* ; VIII *Aus Isidors Schrift Contra Iusaeos* ; IX *Aus den Monsee-Wiener Fragmenten* ; X *Exhortatio ad Plebem Christianam* ; XII *Freisinger Paternoster* ; XIII *Weissenburger Katechismus* ; XIV *Fränkisches Gebet* ; XVI *Das Fränkische Taufgelöbniß* ; XX *Aus dem Tatian* ; XXI *Die Strassburger Eide* ; XXII *Beichten* ; XXIII *Notker : Aus Boethius*, 1 (*Item prologus teutonice*) ; *Aus dem Martianus Capella*, 10 (*Item de eius habitu et forma and Luna*), 11 (*Pluto et Neptunus, Stix et Proserpina, Mars et Liber and Hercules*) ; *Aus der Psalmenübersetzung*, 13 (*Psalm 136, 6-9 aus dem alten Baseler Bruchstück*), 14 (*Psalm 1 aus der St. Galler Handschrift*) ; XXIV *Aus Williram* ; XXV *Aus dem älteren Physiologus* ; XXVI *Otlohs Gebet* ; XXVII *Wessobrunner Predigt* ; XXVIII *Das Hildebrandslied* ; XXIX *Das Wessobrunner Gebet* ; XXX *Muspilli* ; XXXI *Segensformeln* ; XXXII *Aus Otfrids Evangelienbuch* : 7 (I, 5) *Missus est Gabrihel angelus*, 8 (I, 6) *Exurgens autem Maria abiit in montana*, 14 (II, 14)

Jesus fatigatus ex itinere ; XXXIII *Petruslied* ; XXXIV *Christus und die Samariterin* ; XXXV *Lied vom heiligen Georg* ; XXXVI *Das Ludwigslied* ; XXXVII *Gebete* ; XXXIX *De Heinrico* ; XL *Verse aus Notkers Rhetorik* ; XLI *Merigarto* ; XLII *Memento Mori* ; XLIII *Ezzos Gesang*.

- (ii) (b) Old Norse :—E. V. Gordon : *An Introduction to Old Norse* : Extracts I, II, VII, VIII, IX, X, XV.
Eddic Poems : *Reginsmál*, *Fáfnismál*, *Sigurðarkviða hin meiri*, *Helreið Brynhildar*, *Atlakviða*.
Gunnlaugs Saga.
- (ii) (c) Middle Low German :—*Das Redentiner Osterspiel* (W. Stammeler edition).
P. Jørgensen : *Middelnedertyske Tekster til Universitetsbrug* (Gad, Copenhagen, 1946).
- (ii) (d) Middle Dutch :—*Karel ende Elegast*, lines 273–538.
Van den vos Reinaerde (ed. J. W. Muller), lines 1751–2246.
Hadewijch : *Lied V*, *Brief X*.
Van den levne ons Heren, lines 3268–3514.
Jan van Ruusbroec : passages from *Die Chierheit der geesteliker Brulocht* in C. C. de Bruin : *Middelnederlands geestelijk proza*, p. 72 and p. 73 down to “ende vlieghe in gods verborghentheit.”
Jacob van Maerlant : *Van den lande van oversee*.
- (iv) (For Internal Students only.) Stylistic analysis and interpretation of texts :—
Either Kleist's plays or the works of a selected Middle High German author.

Greek

The texts used by the examiners in setting the examination papers will be the Oxford Classical Texts (Clarendon Press) unless some other text is specified.

1954, 1955 and (provisionally) 1956

Group A

- (a) Homer : *Iliad*, Books I, III, XXII–XXIV ; *Odyssey*, Books X–XIV.
(b) Three tragic plays :—
Either Sophocles : *Œdipus Coloneus* ; *Œdipus Tyrannus* ;
Antigone,
or Euripides : *Medea* ; *Iphigeneia in Tauris* ; *Bacchae*.¹

(External candidates must state which option they select.)

- (c) Aristophanes : *Frogs* ; *Clouds* ; *Birds*.
(d) Pindar : *Pythians* ; *Olympians*.
(e) Theocritus, Bion and Moschus.

Group B

- (f) Thucydides : Books V–VII.
(g) Herodotus : Books V–VII.
(h) Plato : *Phaedo* ; *Gorgias*.
(i) Demosthenes : *De Corona* ; *In Cononem* ; *In Calliclem* ; *Philippic III*.

¹ No textual criticism is required for this book.

Roman Historical Subject

Either The Principates of Augustus and Tiberius, 30 B.C. to A.D. 37,
or Roman History from 133 to 70 B.C.

(External candidates must state which option they select.)

Greek Historical Subject

Greek History from 500 to 433 B.C.

Comparative Philology of the Greek and Latin Languages

Greek : C. D. Buck : *An Introduction to the Study of the Greek Dialects*, revised edition (Ginn & Co.), Nos. 18–22, 25, 28 (lines 1–24) 33, 38–40, 43 (lines 1–65), 50, 55 (omitting lines 15–32), 56–58, 60, 66 (lines 1–40), 74 (lines 1–54), 78–80², 110 (IV. 25 to V. 9).

Latin : H. Ernout :—*Recueil de textes latins archaïques* (Paris, Klincksieck), Part I, omitting Nos. 3, 136, 137, 139–146.

Gujarati

For Internal Students only.

1954, 1955 and (provisionally) 1956

Prācina Gurjara Kāvya, Gaekwad's Oriental series, XIII, pp. 41–46 and 86–107.

S. D. Bharucha : *Collected Sanskrit Writings of Parsis*, Part V : Ardā Gvīrā, pp. 29–35, including paragraph 10.

Padmanābha : *Kānhaḍa de Prabandha* (pp. 326–355 in Taraporewala's Collection of Gujarati Poems, Vol. I).

Premānanda Bhaṭṭa : *Nalākhyāna* (any critical edition).

Śāmal : *Madan Mohanā* (Dr. Taraporewala's edition, Vol. II, pp. 514–536).

Dāyāram : *Poems* (Dr. Taraporewala's edition, Vol. III, pp. 456–509).

G. M. Tripāṭhi : *Sarasvatīcandra*, Vol. I.

K. M. Munshi : *Pāṭaṇ ni Prabhutā*.

Navalrām : *Bhaṭnum Bhopālum*.

N. D. Kavi : *Ḥahāngir ane Nurjahān*.

Navalrām : *Navalgranthāvalī* (ed. N. D. Parikh).

Hebrew**I. Hebrew with Aramaic (including Syriac)**

1954

Job ; *Jeremiah I–XXIV* ; *Micah*.

Psalms LXXIII–LXXXIX.

Either *Midrash Genesis Rabbah I–XX*,

or *Midrash Genesis Rabbah I–V*, and Babylonian Talmud, *Baba Bathra*, chapter III.

(External candidates must state which option they select.)

1955 and (provisionally) 1956

Jeremiah I–XXIV ; *Micah* ; *Habakkuk* ; *Ecclesiastes* ; *Canticles*.

Psalms LXXIII–LXXXIX.

Either *Midrash Genesis Rabbah I–XX*,

or *Midrash Genesis Rabbah I–V*, and Babylonian Talmud, *Baba Bathra*, chapter III.

(External candidates must state which option they select)

Aramaic

1954, 1955 and (provisionally) 1956

Aramaic portions of *Daniel* and *Ezra*.Targum Pseudo-Jonathan on *Genesis* I–XII.Targum on *Isaiah* VI–XVI.*Syriac*

1954, 1955 and (provisionally) 1956

John of Ephesus (Bryll edition).

Julian the Apostate (Semitic Study Series).

Gospel of St. Matthew, chapters I–XV in the Peshitta and Old Syriac versions (Burkitt edition).*North Semitic Epigraphy*

1954

G. A. Cooke : *A Text-book of North Semitic Inscriptions*.A. E. Cowley : *Aramaic Papyri of the Fifth Century B.C.**Lachish Letters* 2, 4 and 6 (in H. Torczyner, L. Harding, A. Lewis & A. Starkey : *Lachish I*, Oxford University Press, 1938).

1955 and (provisionally) 1956

G. A. Cooke : *A Text-book of North Semitic Inscriptions*.A. E. Cowley : *Aramaic Papyri of the Fifth Century B.C.**Lachish Letters* 2, 3, 4 and 6 (in H. Torczyner, L. Harding, A. Lewis & A. Starkey : *Lachish I*, Oxford University Press, 1938).*Hebrew, Syriac and Aramaic Literary History*

1954, 1955 and (provisionally) 1956

Hellenistic Literature from 150 B.C. to A.D. 50.

The following books are recommended for study :—

E. Schürer : *Geschichte des Jüdischen Volkes*, Vol. III (4th edition).Susemihl : *Geschichte der Griechischen Literatur in der Alexandrinerzeit*, 2 vols.Zeller : *History of Greek Philosophy*.Wright : *A Short History of Syriac Literature*.R. Duval : *La littérature Syriacque* (Vol. II of *Anciennes littératures chrétiennes*).*Optional Elementary Arabic*

1954 and 1955

Nallino : *Chrestomathia Qorani Arabica*, pp. 32–50.R. A. Nicholson : *Elementary Arabic ; Second Reading Book* (Cambridge University Press), pp. 1–20.

1956 (provisional)

Nallino : *Chrestomathia Qorani Arabica*, pp. 32–50.August Fischer : *Arabische Chrestomathie* (Leipzig, 1948), pp. 1–21 (top).**II. Hebrew (Ancient and Mediaeval) with Aramaic
For Internal Students only.***Hebrew ; Aramaic ; North Semitic Epigraphy*

1954, 1955 and (provisionally) 1956

As in Section I.

Mediaeval Hebrew

1954

Joseph ibn Zabara : *Sefer Shaa'shu'im* (ed. Davidson), pp. 1-147.
 The Poems of Solomon ibn Gabirol, Moses ibn Ezra, and Yehudah
 ha-Levi (Brody : *Anthologia Hebraica*).
 Abraham ibn Hisdai : *Ben ha-Melek we ha-Nazir*.

1955

Joseph ibn Zabara : *Sefer Sha'ashu'im* (ed. Davidson), pp. 1-147.
 The Poems of Solomon ibn Gabirol and Yehudah ha-Levi (Brody :
Anthologia Hebraica).
 Abraham ibn Hisdai : *Ben ha-Melek we ha-Nazir*.

1956 (provisional)

Joseph ibn Zabara : *Sefer Sha'ashu'im* (ed. Davidson).
 The Poems of Moses ibn Ezra (H. Brody : *Anthologia Hebraica*) and of
 Immanuel of Rome (J. Schirmann, *Anthologie der hebraischen*
Dichtung in Italien, pp. 137-167).
 Abraham ibn Hisdai : *Ben ha-Melek we ha-Nazir*.

Hebrew and Aramaic Literary History

1954, 1955 and (provisionally) 1956

Hellenistic Literature (as in Section I). Period of Mediaeval Literary
 History : A.D. 1200-1500. Book recommended : M. Waxman :
A History of Jewish Literature.

III. Hebrew with Arabic*Hebrew*

1954, 1955 and (provisionally) 1956

As in Section I.

Arabic

1954

Riwāyāt al-Aghāni, vol. I, to p. 151.
 Badī' az-Zamān : *Maqāmāt* (ed. Muḥammad 'Abduh), I-X.
Selections from the Ṣaḥīḥ of al-Bukhārī (ed. Torrey).

1955 and (provisionally) 1956

Ibn Ḥaukal : *Opus Geographicum* (ed. J. H. Kramers, Leiden), pp. 18-107,
 132-164.
 Badī' az-Zamān : *Maqāmāt* (ed. Muḥammad 'Abduh), I-X.
Selections from the Ṣaḥīḥ of al-Bukhārī (ed. Torrey).

IV. Hebrew with Assyrian**For Internal Students only.***Hebrew*

1954, 1955 and (provisionally) 1956

As in Section I.

*Assyrian***1954 and 1955**D. D. Luckenbill : *Inscriptions of Sennacherib*.R. Campbell Thompson : *Gilgamesh Epic*.**1956 (provisional)**D. D. Luckenbill : *Inscriptions of Sennacherib*.A. Deimel and others : *Codex Hammurabi* (Rome, Pontificum Institutum Biblicum, IV).**V. Hebrew with Egyptian****For Internal Students only.***Hebrew***1954, 1955 and (provisionally) 1956**

As in Section I.

*Middle Egyptian***1954 and 1955**A. de Buck : *Egyptian Reading Book* (Leiden, 1948).A. Blackman : *Middle Egyptian Stories*, pp. 1-41 (The Story of Sinuhe).**1956 (provisional)**A. de Buck : *Egyptian Reading Book I* (Leiden, 1948), pp. 100-106 (The Story of the Shipwrecked Sailor).Sethe : *Ägyptische Lesestücke*, No. 12 (*Hymn to King Senwosret III*), No. 14 (*Stela of Ikhnofret*), and No. 34 (*Royal Decree from Koptos*).**Hindi****For Internal Students only.****1954**Cand Bardāi : *Prithī Rāj Rāso*, Canto I, stanzas 16-41 (edition : Nāgarī Pracāriṇī Sabhā, Benares).Kabīr : *Pad* (10 selected) and *Sākhīs* (10 selected) (edition : *Sant Kabīr*, published by the Sāhitya Bhavan Ltd., Allahabad).Sūr Dās : *Pad* (10 selected) (edition : *Sūr Sudhā*, published by the Nāgarī Pracāriṇī Sabhā, Benares).M. M. Jāyasī : *Padumāvati* (Nāgmatī Virah Varṇan Khaṇḍ) (edition : *Jāyasī Granthāvalī*, published by the Nāgarī Pracāriṇī Sabhā, Benares).Tulsī Dās : *Rām Carit Mānas* (Bāl Kāṇḍ, Dohas 1-89, and Uttar Kāṇḍ, Dohas 60-233) (edition : *Tulsī Granthāvalī*, published by the Nāgarī Pracāriṇī Sabhā, Benares).Bihārī Lāl : *Satsai* (Dohas 1-25) (edition : published by the Office of the Superintendent of Government Printing, India, Calcutta).Bhāratendu : *Candrāvalī Nāṭikā* (edition : *Bhāratendu Nāṭakāvalī*, published by the Indian Press Ltd., Allahabad).M. S. Gupta : *Sāket*, Canto 4 (published by the Sāhitya Sadan, Cirgaon, Jhansi).

- J. S. Prasād : *Kāmāyanī* (*Cintā-Īrṣyā* and *Darśan Anand*) (published by the Leader Press, Allahabad).
- J. S. Prasād : *Dhruva Svāminī* (published by the Leader Press, Allahabad).
- Prem Cand : *Karmabhūmi* (published by the Sarasvatī Press, Benares).
- Śyām Sundar Dās : *Sāhityālocan*, chapters 4–6 (revised edition, published by the Indian Press Ltd., Allahabad).
- Dhirendra Varmā : *Vicār Dhārā* (5 selected essays) (published by the Sāhitya Bhavan Ltd., Allahabad).
- Chāyā : *Ādamkhor* (5 selected stories) (published by the Jayadev Prakasan, Aligarh).

1955 and (provisionally) 1956

- Cand Bardāi : *Prithī Rāj Rāso*, I, 16–41 (edition : Nāgarī Pracāriṇī Sabhā, Banaras).
- Kabīr : 10 *Pad* and 10 *Sākhī*, selected from *Sant Kabīr* (Sāhitya Bhavan, Allahabad).
- Sūr Dās : 10 *Pad*, selected from *Sūr Sudhā* (Nāgarī Pracāriṇī Sabhā, Banaras).
- Malik Muḥammad Jayasī : *Padumāvati*, *Nāgmatī-viyog-khaṇḍ* (edition : *Jayasī-granthāvalī*, Nāgarī Pracāriṇī Sabhā).
- Tulsī Dās : *Rāmcaritmānas*, Bāl Kāṇḍ, 1–112.
Vairāgya-Sandipinī.
Both texts in *Tulsī-granthāvalī*, Nāgarī Pracāriṇī Sabhā.
- Bihārī Lāl : *Satsai*, 1–25, with the commentary *Lāl-candrikā* of Lallū Jī Lāl (ed. Grierson).
- M. Ś. Gupta : *Sāket*, Cantos IV and IX (Sāhitya Sadan, Jhansi).
- J. Ś. Prasād : *Kāmāyanī*, *Cintā* to *Kām* (Leader Press, Allahabad).
- L. N. Miśra : *Rākṣas kā mandir* (Leader Press, Allahabad).
- Prem Cand : *Godān* (Sarasvatī Press, Banaras).
- Śyām Sundar Dās : *Sāhityālocan*, 4–6 (revised edition, Indian Press, Allahabad).
- Dhirendra Varmā : *Vicār Dhārā*, 5 selected essays (Sāhitya Bhavan, Allahabad).

History

1954, 1955 and (provisionally) 1956

Special Subjects

(2) Greek History, 500–433 B.C.

To be studied in the following authorities :—

Herodotus, Books V–IX.

Thucydides (ed. Stuart Jones, Clarendon Press) : Book I, chapters 89–138.

Aristotle : *Constitution of Athens*, chapters 22–28 (ed. Blass, Teubner).

G. F. Hill : *Sources for Greek History* (new edition by R. Meiggs & A. Andrewes, Clarendon Press, 1951).

M. N. Tod : *Historical Greek Inscriptions*, vol. I (2nd ed., 1946).

(3) Philip II and Alexander of Macedon, 356–323 B.C.

To be studied in the following authorities :—

Demosthenes : *Orations* I–VI, IX, XVII–XIX.

Aeschines : *Orations* II–III.

Isocrates : *Oration* V ; *Letters* 2–3.

Diodorus : Book XVI.

Plutarch : *Lives of Demosthenes and Alexander*.

Arrian : *Anabasis*.

Q. Curtius : *Historia Alexandri Magni*.

M. N. Tod : *Historical Greek Inscriptions*, Vol. II (1948).

(4) Roman History, 133–70 B.C.

To be studied in the following authorities :—

Appian : *Bella Civilia*, Book I.

Plutarch : *Lives of the Gracchi, Marius and Sulla*.

Sallust : *Bellum Jugurthinum*.

A. H. J. Greenidge & A. M. Clay : *Sources for Roman History 133–70 B.C.* (Clarendon Press, 1903).

(5) The Principates of Augustus and Tiberius, 30 B.C.–A.D.37.

To be studied in the following authorities :—

Suetonius : *Divus Augustus, Tiberius*.

Tacitus : *Annals*, Books I–VI.

V. Ehrenberg & A. H. M. Jones : *Documents illustrating the Reigns of Augustus and Tiberius* (Clarendon Press, 1949).

Velleius Paterculus : Book II, chapters 85 to end.

(6) The History and Archaeology of Roman Britain (to be studied from literary, epigraphic and archaeological sources).

To be studied in the following authorities :—

R. W. Moore : *The Romans in Britain, a selection of Latin texts* (Methuen, 1938) and, in addition, the following texts cited in that book :—

Strabo, IV, v, 1–3 (Loeb).

Cassius Dio, lx, 19–22 ; lxii, 2–7 ; lxxi, 16 ; lxxii, 8 ; lxxvi, 12–13 (Loeb).

Herodian, III, 8, 14–15 (Teubner).

Zosimus, I, 66 ; IV, 35–6 ; V, 5, 10, 27, 43 (ed. Mendelssohn).

Procopius, *Bellum Vandalicum*, I, 2 (Loeb).

Notitia Dignitatum, Occ. i, iii, vii, xxiii, xxviii, xxix, xl (Seeck).

Greek authorities may be read in translation. Candidates will be expected to have sufficient knowledge of the general principles of Latin epigraphy to be able to translate and interpret inscriptions of standard types found in Britain. A selection of Latin inscriptions bearing upon Roman Britain will be found in A. R. Burn : *The Romans in Britain* (Blackwell, 1932).

(7) The Age of the Guptas, c. A.D. 320 to c. A.D. 550.

To be studied in the following authorities :—

J. F. Fleet : *Corpus Inscriptionum Indicarum*, Vol. III (Calcutta, 1888).

R. G. Basak : *The Five Damodarpur Copper-Plate Inscriptions of the Gupta Period* (*Epigraphia Indica*, XV, Calcutta, 1925, pp. 113–145).

S. Beal : *Si-yu-ki. Buddhist Records of the Western World*. Trans. from the Chinese of Hiuen Tsang, Vol. I (London, 1884), pp. xxiii–cviii.

J. Allan : *Catalogue of the Coins of the Gupta Dynasties* (London, 1914), pp. xiv–cvi.

D. C. Sircar : *Select Inscriptions*, Vol. I (Calcutta, 1943), pp. 253–432.

(8) The Conversion and the Age of Bede, 597–735.

To be studied in the following authorities :—

Bede : *Historia Ecclesiastica* (ed. Plummer), Preface, Book I, chapters xxiii–xxxiv, Books II, III, IV and V.

Eddius : *Vita Wilfridi* (ed. Colgrave).

The following books are also recommended :—

Bede : *Historia Abbatum* (ed. Plummer).

Vita Ceolfredi, otherwise known as *Historia Abbatum auctore Anonymo* (ed. Plummer).

Anonymous *Life of St. Cuthbert* and Bede's *Prose Life of St. Cuthbert* (in *Two Lives of St. Cuthbert*, ed. Colgrave).

Laws of Ethelbert, Hlothere and Eadric, Wihtred and Ine (in translation).

Anglo-Saxon Chronicle, annals 596–734 (in translation).

Clapham : *English Romanesque Architecture before the Norman Conquest*. (For illustrations of architecture, sculpture, etc., of the period before c. 735.)

Massai, F. : *Essai sur les origines de la miniature dite irlandaise* (Publications de Scriptorium, vol. i, Brussels, 1947).

(The papers will include questions on English architecture, sculpture, and decorated manuscripts of this period.)

(9) The Byzantine Empire from the Accession of Basil II to the First Crusade with special reference to its relations with the Papacy and the Holy Roman Empire.

To be studied in the following authorities :—

Liutprand of Cremona : *Antipodosis and Relatio* (ed. J. Becker, 3rd ed., Hanover and Leipzig, 1915, *Scriptores rerum germanicarum in usum scholarum*).

Leo IX : *Epistolae*, 100–103 (Patrologia Latina, Vol. 143, or ed. C. Will, *Acta et scripta quae de controversiis ecclesiae graecae et latinae saeculo undecimo composita extant*, Leipzig and Marburg, 1861).

Cardinal Humbert : *Commemoratio and Excommunicatio* (Patrologia Latina, Vol. 143, or ed. C. Will, *op cit.*).

Michael Cerularius : *Edictum Synodale* (Patrologia Graeca, Vol. 120, or ed. C. Will, *op cit.*, in Latin).

Michaelis Cerularii cp. patriarchae Dominici Gradensis et Petri Antiocheni episcoporum epistolae mutuae (Patrologia Graeca, Vol. 120, or ed. C. Will, *op cit.*, in Latin).

Symeon the Young : *Oratio* 25 (Patrologia Graeca, Vol. 120, in Latin).

Nicetas Stethatus : *Vita Symeonis Junioris* (ed. I. Hausherr & G. Horn, *Orientalia Christiana*, Vol. 12, No. 45, Rome 1928, in French).

John Mauropous, Archbishop of Euchaita : *Vita Sancti Dorothei* (Patrologia Graeca, Vol. 120, in Latin).

Michael Psellus : *Chronographia* (trans. E. R. A. Sewter, Routledge).

Anna Comnena : *Alexias*, trans. A. E. S. Dawes (London, 1928).

(10) The Assassins in Syria, 1100–1260.

For Internal Students only.

To be studied in the following authorities :—

Ibn-al-Qalānisi : *History of Damascus* (ed. Amedroz, Beirut, 1908).

Kamāl ad-Dīn : *History of Aleppo* (ed. Sāmī Dahān, Damascus, 1951).

Kamāl ad-Dīn : *Biographical Dictionary* :

Biographies of Janāh ad-Dawla, Khalaf b. Mulā 'ib, Rāshid ad-Dīn, Sinān (available in photostats).

'Azīmī : *La Chronique Abrégé* (ed. C. Cahen, *Journal Asiatique*, 1938, Vol. CCXXX).

- Bustān al-ġāmi'* (ed. C. Cahen, *Bulletin d'Etudes Orientales de l'Institut français de Damas*, Vols. VII–VIII).
- Ibn al-Athīr : *Chronicon* (ed. Tornberg, Leiden, 1851–76), X, XI, XII.
- Bahā ad-Dīn : *History of Saladin. Recueil des Historiens des Croisades, Historiens Orientaux*, III.
- Abū Shāma : *K. Ar-Rawdatain* (Cairo, 1870).
- Abū Shāma : *Tarājim* (Cairo, 1947).
- Sibt ibn al-Jawzī : *Mir 'āt az Zamān* (ed. Jewett, Chicago, 1907).
- Abū Firās : *Manāqib Rāshid ad-Dīn* (ed. Guyard, *Journal Asiatique*, 1877, part I, 131–168).
- Inscriptions in Van Berchem : *Epigraphie des Assassins de Syrie* (*Journal Asiatique*, 1897).
- Michael the Syrian : *Chronique* (trans. Chabot, Paris, 1899–1910, III).
- Bar-Hebraeus : *Chronography* (trans. E. Wallis Budge, Oxford, 1932).
- Anonymous Syriac Chronicle* (trans. A. S. Tritton, *Journal of the Royal Asiatic Society*, 1933).
- William of Tyre : *History of Deeds done beyond the Sea* (translated by E. A. Babcock & A. C. Krey, Columbia, New York, 1943).
- Continuation of the History of William of Tyre* (in Migne, *Patrologia Latina*, vol. 201).
- Joinville : *Life of St. Louis* (in English translation).

(11) England in the Reign of Henry II, 1154–1189.

To be studied in the following authorities :—

- Gesta Regis Henrici Secundi Benedicti Abbatis* (Benedict of Peterborough), ed. W. Stubbs. Rolls Series, No. 49, 2 vols., 1867, Vol. I and Vol. II to page 71.
- William of Newburgh : *Historia Rerum Anglicarum* (Chronicles of Stephen, Henry II, and Richard I), ed. R. Howlett. Rolls Series, No. 82, Vol. I, 1884, Books II and III.
- Ralph de Diceto : *Opera Historica : Ymagines Historiarum* to 1189, ed. W. Stubbs. Rolls Series, No. 68, 1876. Parts of Vol. I and Vol. II.

(12) The Conciliar Movement (1378–1450), with special reference to heresy.

To be studied in the following authorities :—

- Johannes Gerson : *De modis uniendi ac reformandi ecclesiam*, in H. von der Hardt : *Magnum oecumenicum concilium Constantiense*, Helmstedt, 1700 ff., Tom. I, pars. v, pp. 68–142.
- H. von der Hardt : *Magnum oecumenicum concilium Constantiense*, Helmstedt, 1700 ff., Tom. I coll. 1056–1068, 1079–83 ; Tom. IV coll. 150–157, 235–253, 281–285, 748–773, 1367–1377, 1432–1444, 1450–1456, 1479–1491, 1533–1541, 1567–1579 ; Tom. V, pars. iii coll. 57–74, 77–101.
- M. Jāna Husi *Korespondence a dokumenty* (ed. V. Novotný, Prague, 1920) : the documents numbered 93, 96, 124, 133, 139, 141, 143, 160, 163, 165. (The same documents may be read in *Documenta Mag. Johannis Hus* (ed. F. Palacký, Prague, 1869), numbers 39, 40, 63, pp. 233–4, numbers 78, 80, 84, 62, 64, 65).
- Petri de Mladoňovic Relatio* (ed. F. Palacký, *Documenta Mag. Johannis Hus*, Prague, 1869, pp. 273 to 323 only).
- Poggius Bracciolini : *De Hieronymi Pragensis obitu et suppliciis epistola* (in Palacký, *Documenta* as above, pp. 624–629).
- Monumenta conciliorum generalium saeculi XV. Concilium Basiliense, Scriptores* (Vienna, 1857–96), Vol. I, pp. 289–357, 484–504.

Photostat copies of these works may be purchased from the University Library or consulted in the Library of the School of Slavonic and East European Studies.

The following book is also recommended :—

Ulrich von Reichenau : *Chronik des Konstanzer Konzils* (ed. M. R. Buck, Tübingen, 1882).

(13) Florence and the Renaissance, 1464–1530.

To be studied in the following authorities :—

- Savonarola : *Trattato circa il reggimento della città di Firenze*. 8th and 13th Sermon on Haggai, 1st Sermon on Psalms, Dec., 1494–Jan., 1495 (Villari-Casanova : *Scelta di prediche . . . di Fra Girolamo Savonarola*, Florence, 1898, pp. 66–87, 103–110).
- Guicciardini : *Storie fiorentine dal 1378 al 1509* (ed. Palmarocchi).
Dialogo del reggimento di Firenze (Palmarocchi).
- Machiavelli : *Il Principe* (ed. Burd).
Discorsi sopra la prima deca di Tito Livio ; Discorso sopra il riformare lo stato di Firenze (in *Opere*, Italia ed., VI, pp. 240–254).
- Giannotti, Donato : *Discorso intorno alla forma della repubblica di Firenze* (in *Opere*, ed. Polidori, I, Florence, 1850, pp. 17–42).
- Nardi : *Istorie della città di Firenze* (Books I–IX).
- Reform of the Council of Cento of July, 1471 (V. Riccioni : *La costituzione politica di Firenze*, Florence, 1913, pp. 147–8).
- Law of April, 1480, establishing the Council of Settanta (Arch. Stor. Ital. I, 1842, pp. 329–40).
- Treaty with Charles VIII of November, 1494 (Arch. Stor. Ital. I, 1842, pp. 362–375).
- Law of December, 1494, establishing the Great Council (Florence, Arch. di Stato, Provvisioni 186, fos. 7ff).
- Treaty with Cesare Borgia of May, 1501 (Arch. Stor. Ital. XV, 1851, pp. 269–71).
- Law of August, 1502, establishing the *gonfalonierato a vita* (L. Banchi : *Raccolta di scritture varie*, Turin, 1865).

(14) The Economic and Social History of Tudor England.

To be studied in the following authority :—

- *R. H. Tawney & Eileen Power : *Select documents illustrating the Economic and Social History of Tudor England* (3 vols., Longmans).

An asterisk against the name of a book indicates that it will be available for use in the Examination-room.

(15) The English Pioneers in South-East Asia, 1578–1623.

To be studied in the following authorities :—

- (a) Selected narratives from *Purchas, His Pilgrimes* (references are to Maclehose edition) :—
1. Ralph Fitch : X, 165–204.
 2. William Keeling : II, 502–549.
 3. David Middleton : III, 51–60.
 4. Nathaniel Courthope : V, 86–125.
 5. Thomas Spurway : IV, 508–535.
- (b) Hakluyt Society volumes :—
1. *The Voyages of Sir James Lancaster* (ed. Sir W. Foster, 1940), pp. 1–148, Journals ; 149–167, Collateral documents (from the East India Company's Records).
 2. *The Voyage of Sir Henry Middleton to the Moluccas, 1604–6* (ed. Sir W. Foster, 1943), pp. 1–176, Narratives and Journals ; 177–200, Collateral documents.
 3. *Peter Floris, His Voyage to the East Indies in the Globe, 1611–15* (ed. W. H. Moreland, 1934), pp. 1–148, Journal.

4. *The Voyage of Thomas Best to the East Indies, 1612-14* (ed. Sir W. Foster, 1934), pp. 1-228, Narratives and Journals ; 229-61, Collateral documents ; 262-304, Extracts from the Court Minutes of the East India Company.
 5. *The Journal of John Jourdain* (ed. Sir W. Foster, 1905), pp. 230-348, Journal.
- (c) *Calendar of State Papers Colonial*, Vol. III, 1622-24 : No. 460, I, pp. 283-6, Dutch version of Amboyna Massacre ; No. 499, I, pp. 303-20, English version of Amboyna Massacre.

(16) Church and State in England under Charles II.

To be studied in the following authorities :—

- Statutes of the Realm* (1819), v. 242-6, 321-3, 350-1, 420, 516-20, 576-7, 665-82, 725-7, 848-50.
- C. Grant Robertson (ed.) : *Select Statutes, Cases and Documents* (7th edition, 1942), pp. 24-5, 32-4, 37-53, 60-6, 67-92, 102-4, 367-8, 379-84. (Any earlier editions may be used.)
- E. B. Underhill (ed.) : *Tracts on Liberty of Conscience and Persecution, 1614-1661* (Hanserd Knollys Society, 1846), pp. 297-308, 323-41.
- Edward Cardwell (ed.) : *A History of Conferences . . . connected with the revision of the Book of Common Prayer* (2nd ed., 1841), pp. 277-86, 296-368 (alternatively, 1st ed., 1840, same pages).
- Edward Cardwell (ed.) : *Documentary Annals of the Reformed Church of England* (2nd ed., 1844), ii. 272-332, 337-42, 347-51 (alternatively, 1st ed., 1839, ii. 221-81, 286-91, 296-300).
- Edward, Earl of Clarendon : *The History of the Rebellion* (ed. D. W. Macray, 1888), vi, 192-234.
- The Life of Edward, Earl of Clarendon* (1827 or 1857).
- G. Burnet : *The History of my own Time* (2 vols., ed. O. Airy, 1897-1900).
- H. C. Foxcroft : *A Supplement to Burnet's History of my own Time* (1902).
- The Diary of John Milward* (ed. C. Robbins, 1938), pp. 214-22.
- The Autobiography of Richard Baxter* (ed. J. M. Lloyd Thomas, 1925), pp. 142-254 (alternatively, in the Everyman ed., 1931, same pages).
- Samuel Parker : *A Discourse of Ecclesiastical Politie* (1670).
- W. H. Dunham, Jr., & S. Pargellis (ed.) : *Complaint and Reform in England, 1436-1714* (1938), pp. 733-822.
- Thomas Hobbes : *Leviathan*.
- John Locke : *A Letter concerning Toleration* (1689) (in *Second Treatise*, etc., ed. J. W. Gough, 1946).

(17) The Diplomatic History of the War of the Spanish Succession, 1705-1714.

To be studied in the following authorities :—

- G. M. Trevelyan : *Select Documents for Queen Anne's Reign, 1702-7* (Cambridge University Press, 1929).
- British Diplomatic Instructions, 1689-1789*, Vol. II : *France, 1689-1721* (ed. for Royal Historical Society by L. G. Wickham Legg, 1925), pp. 8-79.
- Journal inédit de J. B. Colbert, Marquis de Torcy, 1709-11* (ed. F. Masson, Albin Michel, 1903, or Plon, 1884).
- Hist. MSS. Comm., *Portland MSS.* : Vol. IX, 1923 (Strafford's letters, pp. 289-402).

Bolingbroke's Defence of the Treaty of Utrecht, being letters vi-viii of *The Study and Use of History* : with an Introduction by G. M. Trevelyan (Cambridge University Press, 1932).

MSS. of the Earl of Buckinghamshire and others : Hist. MSS. Comm. No. 38, 14th Report, Appendix, Part IX (1895), c. 7882.

William Coxe : *Memoirs of the Duke of Marlborough* (letters on diplomatic negotiations).

Jonathan Swift : *The Conduct of the Allies* (ed. C. B. Wheeler, Oxford, 1916).

The following books are also recommended :—

Recueil des instructions pour les Ambassadeurs de France : Hollande, Vol. II, 1924, pp. 113-321 : *Missions pendant la guerre de la succession d'Espagne*.

R. Geikie & I. Montgomery : *The Dutch Barrier, 1705-19* (Cambridge University Press, 1930).

(18) The Age of Peter the Great.

For Internal Students only.

To be studied in the following authorities :—

Pososhkov : *Kniga o Skudosti i Bogatstve* (ed. Kafengauz, Moscow, 1937), Chapters II, III, IV and VII.

Voskresensky : *Zakonodatel'nye Akty Petra I*, Vol. I (Moscow-Leningrad, 1945) :—

1. The Senate—pp. 197, 199, 201, 204, and Procurator General—308-310.

2. Colleges—pp. 216-217, 218. Synod—81, (83), (121), and Procurator 109-110.

3. Justice, Code of Laws—pp. 40-41, 107, (30), 132-133.

4. Law of Succession (Conflict with Alexis)—163-169, 170, 174-176, 177, (113-114).

5. Coronation of Catherine—179-180.

6. Instructions concerning Gentry—351-352, 353-354-355.

7. Miscellaneous Orders—(against the selling of single peasants), p. 92, (against abuse or torture), p. 101, (against forced marriages), p. 103.

8. Education, Schools—33-34, 241-242. Books, Translations—34-35, 44, 47-48, 110-111, 112-114, 119, 128-129, 143-144, 148.

9. Letters—180-182.

10. Historical Notes concerning his reign—115-117, 150.

Martens : *Recueil des Traités*, Tome IX (x), Nos. 379, 380, 381 ; XIII, No. 471.

(19) The French Revolution, 1787-1795.

To be studied in the following authorities :—

A. Bayet et F. Albert : *Les écrivains politiques du XVIII^e siècle* (Paris, Armand Colin).

Sieyès : *Qu'est-ce que le Tiers Etat ?*

Arthur Young : *Travels in France*.

J. M. Thompson : *French Revolution Documents, 1789-94* (Oxford, Basil Blackwell).

Burke : *Reflections on the revolution in France*.

Robespierre : Selected speeches (2 and 11 Jan., 5 Nov., 3 Dec., 1792 ; 24 April, 5 Dec., 1793 ; 31 March, 7 May, 26 July, 1794). (These speeches may be read in Robespierre : *Discours et Rapports*, ed. C. Vellay ; H. Morse Stephens : *Orators of the French Revolution* ;

Buchez et Roux : *Histoire parlementaire de la révolution française ; l'ancien Moniteur* ; and other editions.)
 Camille Desmoulins : *Le Vieux Cordelier* (ed. A. Mathiez et H. Calvet, Paris, Armand Colin).

(20) The Emancipation of Latin-America, 1808-1826.

To be studied in the following authorities :—

- D. F. O'Leary : *Bolívar y la Emancipación de Sur-América. Memorias del General O'Leary, 1783-1826* (2 vols., Biblioteca Ayacucho, Editorial América, Madrid, 1915).
 C. K. Webster : *Britain and the Independence of Latin America*, Vol. I, pp. 83-368 (Oxford University Press, 1938).
 R. A. Humphreys : *British Consular Reports on the Trade and Politics of Latin America, 1824-1826*, pp. 1-342 (Camden Third Series, vol. lxii, Royal Historical Society, 1940).
 Mariano Moreno : *Representación, en nombre de los labradores y hacendados, de las campañas del Río de la Plata, 1809* (in any edition of Moreno's writings, e.g., *Escritos de Mariano Moreno*, ed. Norberto Piñero, Buenos Aires, 1896, pp. 88-224 ; or *Escritos Políticos y Económicos*, Buenos Aires, 1915, pp. 111-179).
 Ernesto de la Cruz, J. M. Goenaga, B. Mitre, Carlos A. Villanueva : *La Entrevista de Guayaquil* (Biblioteca de la juventud hispano-americana, Editorial América, Madrid, 1917).

The following books are also recommended :—

- W. R. Manning : *Diplomatic Correspondence of the United States concerning the independence of the Latin-American Nations* (3 vols., Carnegie Endowment for International Peace, O.U.P., 1925).
 Sir Woodbine Parish : *Buenos Aires and the Provinces of the Río de la Plata* (2nd edition, London, 1852).

(21) The Reconstruction of Europe and the European Alliance, 1813-1822,

To be studied in the following authorities :—

- C. K. Webster : *British Diplomacy, 1813-1815* (George Bell & Sons).
 Metternich : *Mémoires*, III, pp. 123-176, 359-527 (Plon, Paris).
Dépêches inédites du Chevalier de Gentz, Vol. II, pp. 1-135 (éd. Comte Prokesch-Osten, Plon, Paris).
 Chateaubriand : *Le Congrès de Vérone* (*Œuvres complètes*, éd. Sainte-Beuve, Vol. XII, Garnier Frères, Paris).

The following book is also recommended :—

- Mémoires du Prince Talleyrand* (éd. Duc de Broglie, Vol. II, pp. 214-560, Calmann Levy, Paris).

(22) The Growth and Government of London, 1828-1855.

For Internal Students only.

To be studied in the following authorities :—

- Report of the Commissioners appointed to inquire into the existing state of the Corporation of the City of London* (P.P.H. of C. 1854 (1772), XXVI).
Report on the state of the Police of the Metropolis (P.P.H. of C. 1828 (533), VI).
First Report on the state of Large Towns, pp. 1-470 ; *Second Report on the state of Large Towns*, pp. 1-118 (P.P.H. of C. 1844 (572), XVII, and 1845 (602), XVIII).

The following books are also recommended :—

- J. W. Brooke : *The Democrats of Marylebone* (1839).

A collection of the Acts of Parliament relating to the Parish of St. Marylebone.

Henry Mayhew : *London Labour and the London Poor* (1865 edition), 3 vols.

(Sir) John Simon : *Reports relating to the sanitary condition of the City of London* (1854).

(23) The Eastern Question, 1856–1878.

To be studied in the following authorities :—

*K. Strupp : *Ausgewählte Diplomatische Aktenstücke zur orientalischen Frage* (the relevant documents) (Perthes, Gotha, 1916).

W. G. East : *The Union of Moldavia and Wallachia*, 1859 (Cambridge University Press, 1929).

G. E. Buckle : *Life of Benjamin Disraeli, Earl of Beaconsfield*, Vol. VI (the documents printed in chapters 1–9) (John Murray, London, 1916).

**Russo-British Relations 1876–8* (ed. R. W. Seton-Watson, iv–vii. Reprint from *Slavonic Review*, School of Slavonic Studies).

Selections from the Memoirs of Count Ignatyev (ed. A. Onou. Reprint from *Slavonic Review*, School of Slavonic Studies).

**Documents Diplomatiques Français* (1871–1914), Première série, Tome II (Documents 1–327). (Paris, 1930.)

Lady G. Cecil : *Life of Robert Marquis of Salisbury*, Vol. II (documents in chapters iv–viii). (Hodder & Stoughton, London, 1921).

The following books are also recommended :—

Hon. Robert Curzon : *Visits to the Monasteries in the Levant* (any edition).

A. P. Irby & G. M. M. Mackenzie : *Travels in the Slavonic Provinces of Turkey-in-Europe* (London, 1875).

Louis Thouvenel : *Trois années de la question d'Orient d'après les papiers inédits de M. Thouvenel* (Paris, 1897).

Sir Henry George Elliot : *Some Revolutions and Other Diplomatic Experiences* (ed. Gertrude Elliot, John Murray, London, 1922) (the relevant portions).

Die Grosse Politik der Europäischen Kabinette, 1871–1914, Vol. II : *Der Berliner Kongress und seine Vorgeschichte* (Berlin, 1925). (In the original or in an English translation.)

Letters of Queen Victoria, 2nd series, Vol. II (the relevant letters).

An asterisk against the name of a book indicates that it will be available for use in the Examination-room.

(24) Constitutional Development in British India, 1858–1917.

To be studied in the following authorities :—

Sir C. P. Ilbert : *The Government of India* (3rd ed., 1915–16).

D. Mukherji : *Indian Constitutional Documents*, Vol. I (Thacker Spink Calcutta, 1918).

Viscount Morley : *Recollections*, Vol. 2, pp. 149–343.

The following books are also recommended :—

Report on Indian Constitutional Reforms (1918).

The Sedition Committee Report (1918).

Mary, Countess of Minto : *India : Minto and Morley*.

Sir S. Banerjea : *A Nation in Making*.

Lord Ronaldshay : *The Life of Lord Curzon*, Vol. 2.

(25) The Growth of the British Commonwealth, 1880-1932, with special reference to the development of Dominion status and Imperial co-operation and the evolution of British colonial administration in the Tropical Dependencies.

To be studied in the following authorities :—

- A. B. Keith : *Selected Speeches and Documents of British Colonial Policy, 1763-1917*, Vol. I, pp. 337-81, Vol. II (the whole) ; *Select Documents on the British Dominions, 1918-1931*.
Report by the Hon. E. F. L. Wood on his visit to the West Indies and British Guiana (Cmd. 1679, 1922).
West India Royal Commission Report (Cmd. 6607, 1945), Cap. i, Cap. ii, secs. i and ii, Cap. iv, secs. i-viii inclusive, Cap. v, Cap. xviii, secs. i and v.
Report of the Special Commission on the Constitution of Ceylon (Cmd. 3131, 1928).
Ceylon, Report of the Commission on Constitutional Reform (Cmd. 6677, 1945), Caps. i, ii, iii, vi, vii, ix, x.
League of Nations : *British Mandate for East Africa (Tanganyika Territory)* (1922).
Report by the Hon. W. G. Ormsby-Gore on his visit to West Africa (Cmd. 2744, 1926).
Report of the Royal Commission on closer union of the dependencies in Eastern and Central Africa (Cmd. 3234, 1929).

The following books are also recommended :—

- Sir H. Jenkyns : *British Rule and Jurisdiction beyond the Seas* (Clarendon Press, 1902).
L. Curtis : *The Problem of the Commonwealth* (Macmillan, 1916).
Sir F. D. (Baron) Lugard : *The Dual Mandate in British Tropical Africa* (Blackwood, 1922).
M. F. Perham : *Native Administration in Nigeria* (Longmans, 1937).

(26) The Closing of the Frontier in the United States, 1885-1896.

To be studied in the following authorities :—

- H. T. Peck : *Twenty Years of the Republic, 1885-1905*, chaps. i-ix (Dodd, Mead, New York, 1905 ; reprinted 1932).
Letters of Grover Cleveland, 1850-1908 (ed. A. Nevins), pp. 1-470 (Houghton Mifflin Co., Boston and New York, 1933).
Wabash, St. Louis and Pacific Railway Company v. Illinois, 1886, *Stone et al. v. Farmers' Loan and Trust Company, 1886* ; *Chicago ; Milwaukee and St. Paul Railway Company v. Minnesota, 1889* ; *Reagan v. Farmers' Loan and Trust Company, 1894*. (To be studied in J. B. Thayer : *Cases on Constitutional Law*, 2 vols., Cambridge, Mass., 1895, pp. 2045-56, 1733-8, 660-72, 1745-53).
Report of investigation of trusts, relating especially to the sugar and Standard Oil trusts, with testimony. 50 Cong., 1 Sess., H.R. 3112 (2606), pp. 1-210 (Govt. Printing Office, Washington, D.C., 1888).
Report of International American Conference as to reciprocity treaties between the United States and other American republics. 51 Cong., 1 Sess., S. Ex. Doc. 158 (Govt. Printing Office, Washington, D.C., 1890).
Report on the Chicago Strike of June-July, 1894 . . . with appendices containing testimony, proceedings, and recommendations 10 Dec., 1894. 53 Cong., 3 Sess., S. Ex. Doc. 7 (3276) (Govt. Printing Office, Washington, D.C., 1895).
In re Debs, 1895. (To be studied in E. Wambaugh : *A Selection of Cases on Constitutional Law*, Cambridge, Mass., 1915, pp. 1030-4).

W. H. Harvey : *Coin's Financial School* (Coin Publishing Company, Chicago, 1894).

The following books are also recommended :—

Statistical Abstract of the United States, 1896. *Nineteenth Number*. Treasury Dept. doc. 1917 (Govt. Printing Office, Washington, D.C., 1897).

J. Bryce : *The American Commonwealth* (3 vols., Macmillan, 1888, or later edition).

(27) **The Anglo-French Entente, 1898–1912.**

To be studied in the following authorities :—

G. P. Gooch & H. Temperley : *British Documents on the Origins of the War*, Vol. II : *The Japanese Alliance and the Anglo-French Entente* ; Vol. III : *The Testing of the Entente : 1904–6* ; Vol. VII : *The Agadir Crisis*.

Documents Diplomatiques Français (1871–1914), 2^e série, Tome VI.

The following books are also recommended :—

Viscount Grey of Fallodon : *Twenty-five Years*, 2 vols.

R. Poincaré : *Au service de la France*, Tome I : *Le Lendemain d'Agadir*.

M. Paléologue : *Un grand tournant de la politique mondiale*, 1904–6.

A. F. Pribram : *Secret Treaties of Austria-Hungary* (English edition by A. C. Coolidge), 2 vols.

B. Siebert : *Diplomatische Aktenstücke zur Geschichte der Entente-politik der Vorkriegsjahre*.

Hungarian (Language and Literature)

1955 and until further notice

Paper 5

1. J. Horváth : *Magyar Versek Könyve*, pp. 1–180 (Budapest, 1937).

2. D. Kerecsényi : *Régi Magyar Próza* (Budapest, 1942), pp. 35, 185–190, 220–222, 247–257, 321–330, 368–372, 401–405, 456–462.

Italian

1954

(a) For linguistic study :—

C. Dionisotti & C. Grayson : *Early Italian Texts* (Blackwell, Oxford) : Nos. II, VII, IX, XI, XII, XVI, XVII, XIX.

Machiavelli : *Il Principe* (ed. G. Lisio, Sansoni), first and last chapter.

Dante : *Inferno* (ed. Casini-Barbi, Sansoni), Canto XXVII.

Galileo : *Scritti letterari* (ed. A. Chiari, Le Monnier, 1943), pp. 47–54.

(b), (c) and (d) Early and Modern Literature :—

Dante : *Inferno* (ed. Casini-Barbi, Sansoni) ; *La Vita Nuova*.

Petrarca : *Canzoniere* (ed. Carducci-Ferrari, Sansoni).

L. B. Alberti : *I primi tre libri della Famiglia* (ed. Pellegrini, Sansoni).

Ariosto : *Orlando Furioso*, Cantos I, VI, IX–XII, XIV, XVI, XVIII, XIX, XXIII, XXIV, XXIX, XXX, XXXIV, XXXIX, XLI–XLIII, XLVI.

Machiavelli : *Il Principe*.

Parini : *Il Giorno* (ed. G. Albini, Sansoni).

Foscolo : *Odi, Sonetti, Sepolcri* (ed. Marinoni, Hoepli).

Leopardi : *Canti* (ed. Scherillo, Hoepli, or ed. Straccali, Sansoni, or ed. Jeffery, Cambridge University Press).

Manzoni : *Liriche e Tragedie* (ed. L. Russo, Sansoni).

Pascoli : *Poemi Conviviali e poesie scelte* (ed. L. Pietrobono, Mondadori).

Carducci : *Rime Nuove* (ed. Zanichelli).

Either G. Carducci : *Primavera e Fiore della Lirica Italiana* (Sansoni),
or *The Oxford Book of Italian Verse* (2nd edition, 1952).

(e) Special Subject :—

One of the following subjects, chosen by the candidate :—

(1) The *De Vulgari Eloquentia* of Dante.

(2) Baretto : his life and works.

(External candidates must state which subject they select.)

1955

(a) For linguistic study :—

C. Dionisotti & C. Grayson : *Early Italian Texts* (Blackwell, Oxford) :
Nos. II, VII, IX, XI, XII, XVI, XVII, XIX.

Machiavelli : *Il Principe* (ed. G. Lisio, Sansoni), first and last chapter.

Dante : *Inferno* (ed. Casini-Barbi, Sansoni), Canto XXVII.

Galileo : *Scritti letterari* (ed. A. Chiari, Le Monnier, 1943), pp. 47-54.

(b), (c) and (d) Early and Modern Literature :—

Dante : *Paradiso* (ed. Casini-Barbi, Sansoni) ; *La Vita Nuova*.

Petrarca : *Canzoniere* (ed. Carducci-Ferrari, Sansoni).

Poliziano : *Orfeo* ; *Stanze per la Giostra*.

Ariosto : *Orlando Furioso*, Cantos I, VI, IX-XII, XIV, XVI, XVIII,
XIX, XXIII, XXIV, XXIX, XXX, XXXIV, XXXIX, XLI-XLIII,
XLVI.

Machiavelli : *Il Principe*.

Parini : *Il Giorno* (ed. G. Albini, Sansoni).

Foscolo : *Odi, Sonetti, Sepolcri* (ed. Marinoni, Hoepli).

Leopardi : *Canti* (ed. Scherillo, Hoepli, or ed. Straccali, Sansoni, or ed.
Jeffery, Cambridge University Press).

Manzoni : *Liriche e Tragedie* (ed. L. Russo, Sansoni).

Pascoli : *Poemi Conviviali e poesie scelte* (ed. L. Pietrobono, Mondadori).

Carducci : *Rime Nuove* (ed. Zanichelli).

Either G. Carducci : *Primavera e Fiore della Lirica Italiana* (Sansoni),
or *The Oxford Book of Italian Verse* (2nd edition, 1952).

(e) Special Subject :—

One of the following subjects, chosen by the candidate :—

(1) The *Convivio* of Dante.

(2) Tasso : his life and works.

(External candidates must state which subject they select.)

1956 (provisional)

(a) For linguistic study :—

C. Dionisotti & C. Grayson : *Early Italian Texts* (Blackwell, Oxford) :
Nos. II, VII, IX, XI, XII, XVI, XVII, XIX.

Castiglione : *Il libro del Cortegiano* (ed. Cian, Sansoni), Book I, chapters
XXXIV-XXXV.

Dante : *Purgatorio* (ed. Casini-Barbi, Sansoni), Canto 26.

Galileo : *Scritti letterari* (ed. A. Chiari, Le Monnier, 1943), pp. 47-54.

(b), (c) and (d) Early and Modern Literature :—

Dante : *Paradiso* (ed. Casini-Barbi, Sansoni) ; *La Vita Nuova*.

Boccaccio : *Decameron* : Introduction ; I, 1, 8 ; II, 4, 5 ; IV, 4, 5, 9 ;
V, 8, 9 ; VI, 2, 4, 5, 9, 10 ; VIII, 3, 6 ; IX, 4, 8 ; X, 2, 10.

Poliziano : *Orfeo* ; *Stanze per la Giostra*.

Ariosto : *Orlando Furioso*, Cantos I, VI, IX-XII, XIV, XVI, XVIII,
XIX, XXIII, XXIV, XXIX, XXX, XXXIV, XXXIX, XLI-XLIII,
XLVI.

Machiavelli : *Il Principe*.

Alfieri : *Tragedie* : *Filippo, Virginia, Agamennone, Oreste, Merope,*
Saul, Mirra.

Foscolo : *Odi, Sonetti, Sepolcri*.

Leopardi : *Canti*.

Manzoni : *I promessi sposi*.

D'Annunzio : *Alcyone* (ed. Palmieri, Zanichelli).

Carducci : *Odi Barbare* (ed. Zanichelli).

The Oxford Book of Italian Verse (2nd edition, 1952).

(e) Special Subject :—

One of the following subjects, chosen by the candidate :—

(1) The *Convivio* of Dante.

(2) Tasso : his life and works.

(External candidates must state which subject they select.)

Japanese (Classical)

1954, 1955 and (provisionally) 1956

Papers 1-4

Eiga-monogatari, extract (K.7, ch. 6).

Gen-Pei-seisuiiki, extract (K.5, ch. 10).

Gikeiki, extract (T., ch. 23).

Heike-monogatari, extracts (K.5, ch. 9 ; K.7, ch. 10 ; T., ch. 13).

Ise-monogatari, extract (K.7, ch. 5).

Masukagami, extract (K.7, ch. 8).

Soga-monogatari, extract (K.5, ch. 8).

Taiheiki, extract (T., ch. 16).

Yosida-Kenkoo (Kenkoo-hoosi), *Turezure-gusa*, extracts (K.5, ch. 14 ; T., ch. 9).

Youti-Soga (noo) (T., ch. 4).

Selections : *Imayoo, Rooeisyuu* (K.7, ch. 11).

Huzioka-Sakutaroo, Heian-kyoo (K.7, ch. 4).

Kamo-Mabuti, Okabe-nikki, extract (K.5, ch. 13).

Kaneko-Motoomi, Uta-gatari (K.5, ch. 11).

Motoori-Norinaga, Tamakatuma, extract (K.5, ch. 12).

Muro-Kyuusoo, Haru-aki no arasoi (K.5, ch. 6).

Takayama-Tyogyuu, Tomo ni yosu (T., ch. 22).

Takizawa-Bakin, Nansoo-Satomi-hakkenden, extract (T., ch. 19).

Ueda-Akinari, Ugetu-monogatari, extract (K.7, ch. 18).

Selection of *senryuu* (T., ch. 8).

Akutagawa-Ryuunosuke, Gesaku-sanmai (T., ch. 18).

Haga-Yaiti, Nippon-syumi (K.7, ch. 13).

Huzii-Kenziroo, Zinsei no syukuzu (K.7, ch. 12).

Mori-Oogai, Kanzan-zittoku (K.7, ch. 17) ; *Takasebune* (K.5, ch. 15).

Natume-Sooseki, Kyoo no haru (K. 5, ch. 4).

Nunami-Keion, Sigure (K.5, ch. 17).

Simazaki-Tooson, Bunsyoo no miti (K.5, ch. 1).

Takahasi-Sooan, Sakubun-syumi (T., ch. 10).

(Chapter references are to :—

K.5—*Kokubunsen*, vol. 5 (Tookyoo, 1933), Meizi-syoin ;

K.7—*id*, vol. 7 (Tookyoo, 1933), Meizi-syoin ;

T—*Tyuugaku-kokubun-kyookasyo*, vol. 6 (Tookyoo, 1934), Koohuukan).

Paper 7

Chinese texts : J. J. Brandt : *Introduction to Literary Chinese* (2nd ed., Vetch, Peking, 1936), pp. 1-68, excluding parallel modern texts and illustrative examples.

Japanese (Modern)

1954, 1955 and (provisionally) 1956

- Heizi-monogatari*, extract (E. & R. III, 208–209)
Ise-monogatari, extract (E. & R. I., 222–227).
Koou-honki, extract (E. & R. I, 248–258).
Roku-Zizoo (kyoogen) (E. & R. III, 118–123).
Taketori-monogatari, extract (E. & R. I, 229–245).
Yosida-Kenkoo, *Turezure-gusa*, extracts (D., 86–96).
Selections from *Kokin-wakasyuu* (E. & R. I, 228) and *Sin-kokin-wakasyuu* (E. & R. III, 9–10).
Ibara-Saikaku, *Nihon-eitaigura*, extracts (E. & R. III, 171–190).
Matuo-Basyoo, *Hakusensyuu*, extract (E. & R. III, 26–30).
Ozaki-Kooyoo, *Siobara*, extract (D., 80–84).
Takayama-Tyogyuu, *Nitiren-syoonin* (E. & R. I, 213–217).
Selection of letters (E. & R. I, 285–298).
Abe-Ziroo, *Nippon no siika* (E. & R. I, 51–63).
Akutagawa-Ryuunosuke, *Kumo no ito* (D., 36–48).
Hisamatu-Sen-iti, *Kokubungaku no seisin* (E. & R. I, 24–35).
Huzii-Kenziroo, *Zinsei no syukuzu* (D., 64–80).
Itoo-Seitoku, *Beikoku-kaigun no dai-gunkaku* (E. & R. I, 111–120).
Kikuti-Kan, *Titi kaeru* (E. & R. I, 185–193) ; *Warai* (S., 84–106).
Kuroita-Katumi, *Kokusi no kenkyuu*, extract (E. & R. I, 140–144).
Matumoto-Matataroo, *Nippon-ga no hattatu* (E. & R. I, 121–135).
Natume-Sooseki, *Sore kara* (E. & R. I, 181–184) ; “*Tuti*” *ni tuite* (E. & R. I, 91–105).
Sizuta-Hitosi, *Kokusai-karuteru no syo-mondai*, extract (E. & R. I, 159–162).
Suzuki-Tyuusei, *Soo-dai-bukkyoo-kessya no kenkyuu* (E. & R. I, 168–171).
Tuda-Sookiti, *Sintoo no go no syuzyu no igi* (E. & R. I, 64–77).

(Page references are to :—

- D=F. J. Daniels : *Japanese Prose* (Lund Humphries & Co., London, 1944) ;
E. & R. I=S. Elisséeff & E. O. Reischauer : *Selected Japanese Texts for University Students* (Harvard-Yenching Institute, 1944), Vol. I ;
E. & R. III=S. Elisséeff & E. O. Reischauer : *Selected Japanese Texts for University Students* (Harvard-Yenching Institute, 1947), Vol. III—*Literature and History*.
S.=A. L. Sadler : *Selections from Modern Japanese Writers* (Australasian Medical Publishing Co. Ltd., Sydney, 1942).)

Latin

The texts used by the examiners in setting the examination papers will be the Oxford Classical Texts (Clarendon Press) unless some other text is specified.

1954, 1955 and (provisionally) 1956

Group A

- (1) Virgil : *Eclogues* ; *Georgics*, Books I and IV ; *Aeneid*, Books IV, VI–VIII, XII.
- (2) Horace, omitting *Satires*, Book I.
- (3) Lucretius : Books I, III, V ; Catullus.
- (4) Plautus : *Amphitryo* ; *Captivi* ; *Rudens* ; *Trinummus*.

Group B

- (5) Cicero : *Philippic II* ; *Pro Cluentio* (in 1954 only) ; *Pro Caelio* (in 1955 and 1956) ; *In C. Verrem Actio Prima* ; *Letters* (ed. How), 2-12, 14-17, 19, 21-23, 26-32, 40, 42-44, 46, 48-51, 54-56, 58, 60, 65, 70, 72, 75, 76, 88.
 (6) Livy : Books XXI, XXII, XXIII, 1-32, 4.
 (7) Tacitus : *Annals*, Books XIII-XVI.

Roman Historical Subject

Either The Principates of Augustus and Tiberius, 30 B.C. to A.D. 37,
or Roman History from 133 to 70 B.C.

(External candidates must state which option they select.)

Greek Historical Subject

Greek History from 500 to 433 B.C.

Comparative Philology of the Greek and Latin Languages

Greek : C. D. Buck : *Introduction to the Study of the Greek Dialects*, revised edition (Ginn & Co.), Nos. 18-22, 25, 28 (lines 1-24), 33, 38-40, 43 (lines 1-65), 50, 55 (omitting lines 15-32), 56-58, 60, 66 (lines 1-40), 74 (lines 1-54), 75-80², 110 (IV. 25 to V. 9).

Latin : H. Ernout : *Recueil de textes latins archaïques* (Paris, Klincksieck), Part I, omitting Nos. 3, 136, 137, 139-146.

Malay

1954, 1955 and (provisionally) 1956

Hikayat Raja-Raja Pasai.

Sĕjarah Mĕlayu (ed. Winstedt).

Hikayat Iskandar Dzu'l-Karnain (extracts in P. J. van Leeuwen : *De Maleische Alexanderroman*, Meppel, 1937).

Hikayat Sĕri Rama (ed. Shellabear).

Hikayat Sĕri Rama (Maxwell's folk version).

Hikayat Bayan Budiman (ed. Winstedt).

Hikayat Pĕlandok (ed. Dussek).

Hikayat Awang Sulong (ed. Winstedt).

Hikayat Hang Tuah (ed. Shellabear).

Risalat Hoekoem Kanoen (ed. van Ronkel, Leiden, 1919).

Hikayat 'Abdullah.

Pantun Mĕlayu (ed. Wilkinson & Winstedt).

Sha'er Ken Tambohan (in 1954, any edition ; in 1955 and 1956 ed. de Hollander, Leiden).

Marathi

For Internal Students only.

1954, 1955 and (provisionally) 1956

V. L. Bhāve : *Mahārāshṭra Sārasvāt*, Vol. I, chapters 1-3.

Ĵnāneśvari, chapter 3, verses 1-75 (ed. Mādḡāvkar or Rājvāde).

S. V. Penḍase : *Rasatarangiṇi* : poems by Nāmdev (pp. 16-23), Rāmdās (pp. 160-170), Moropant (pp. 247-255) and Dāmle.

Paṭvardhan & Keḷkar : *Tukārāmānchya Abhangānchi Charchā*, Part I, Nos. 65-80, 131, 161, 204 and 226.

- D. G. Kelkar : *Śrī Mahārāshṭra Śāradā* : in 1954, poems by Govindāgraja, Bālakavi and Yaśvant ; in 1955 and 1956, poems by Tāmbe, Mādhav Julian, Bālakavi and Ṭīlak.
 K. P. Khādīlkar : *Savāi Mādhavarao yāncha mṛtyu*.
 B. V. Varerkar : *Satteche Gulām*.
 G. S. Sardesai : *Aitihāsik Patra-bodha*, nos. 1-6, 26, 34 and 40.

Pali (with Sanskrit)

1954

Pali :—

- Vinaya Piṭaka, Cullavagga, Khandakas* 7, 11, 12 (Oldenberg's ed., vol. II, pp. 180-206, 284-308).
Itivuttaka (P.T.S. ed).
Dīgha Nikāya, suttas 26 and 27, *Cakkavatti* and *Aggañña* (P.T.S. ed., Vol. III, pp. 58-98), with commentary *Sumangalavilāsini* (P.T.S. ed., Vol. III, pp. 845-872).
Suttanipāta, Mahāvagga, suttas 8-12 (gāthās 574-765), with Commentary *Paramatthajotikā* (P.T.S. ed., Vol. II, pp. 457-510).
Visuddhimagga, chapter IX, *Brahmavihāraniddesa* (P.T.S. ed., pp. 295-325).

Sanskrit :—

- Sāvītryupākhyāna* (*Mahābhārata, Vanaparvan*).
Manusmṛti, Book 9.
 Kālidāsa : *Kumārasambhava*, Canto III.
 Ārya Śūra : *Ātakamālā*, I-IX.

1955 and (provisionally) 1956

Pali :—

- Vinaya Piṭaka, Cullavagga, Khandakas* 7, 11, 12 (Oldenberg's ed., vol. II, pp. 180-206, 284-308).
Itivuttaka (P.T.S. ed).
Nidānakathā, ch. 3 (*Santike-nidāna*), Fausböll, Jataka Vol. I, pp. 77-94.
Suttanipāta, Cūlavagga, suttas 1-14 (gāthās 222-404), with commentary on suttas 8-14 (*Paramatthajotikā*, P.T.S. ed., Vol. II, pp. 325-379).
Visuddhimagga, chapter IX, *Brahmavihāraniddesa* (P.T.S. ed., pp. 295-325).

Sanskrit :—

- Sāvītryupākhyāna* (*Mahābhārata, Vanaparvan*).
Manusmṛti, Book 9.
 Kālidāsa : *Kumārasambhava*, Canto III.
 Ārya Śūra : *Ātakamālā*, I-IX.

Persian (Classical)

1954 and 1955

Papers 1-3

- Nizāmī 'Arūzī : *Chahār Maqāla*.
 Nizām ul-Mulk : *Siyāsāt-Nāma*.
Mujmal at-Tawārīkh wa'l Qiṣaṣ (ed. Malik ush-Shu'arā Bahār, Tehrān, pp. 315-386).
 Hāfiz : 50 Odes of Hāfiz (ed. A. J. Arberry, Cambridge University Press).
 Firdausī : *Shāhnāma*, Episodes as in Pizzi : *Antologia Firdusiana*.
 Nizāmī : *Makhzan ul-Asrār*, Maqālas 1-10.

Paper 4

Arabic : Ibn at-Ṭiqṭaqā' : *al-Fakhrī* (the reigns of Hārūn ar-Rashīd, Amīn and Ma'mūn).

Either R. A. Nicholson : *Elementary Arabic : Second Reading Book*,
or August Fischer : *Arabische Chrestomathie* (Harrassowitz,
Leipzig, 1948 reprint).

al-Qur'ān : sūrat al-baqarah and sūrat al-mā'idah.

or Old Persian : Inscription of Bisitun.

or Middle Persian: *The Book of Zarēr* (Pahlavi Texts, ed. Jamasp-Asana),
pp. 1-16.

Mitteliranische Manichaica I (ed. Andreas-Henning).

(External candidates must state which option they select.)

1956 (provisional)

Papers 1-3

Nizāmī 'Arūzi : *Chahār Maqāla*.

Nizām ul-Mulk : *Siyāsat-Nāma*.

Mujmal at-Tawārikh wa'l Qiṣaṣ (ed. Malik ush-Shu'arā Bahār, Tehrān,
pp. 342-416).

Hāfiẓ : *50 Odes of Hāfiẓ* (ed. A. J. Arberry, Cambridge University Press).

Firdausī : *Shāhnāma*, Episodes as in Pizzi : *Antologia Firdusiana*.

Nizāmī : *Makhzan ul-Asrār*, Maqālas 1-10.

Paper 4

Arabic : Ibn at-Ṭiqṭaqā' : *al-Fakhrī* (the reigns of Hārūn ar-Rashīd,
Amīn and Ma'mūn).

August Fischer : *Arabische Chrestomathie* (Harrassowitz, Leipzig,
1948, pp. 1-120, 151-171).

al-Qur'ān : sūrat al-baqarah and sūrat al-mā'idah.

or Old Persian : Inscription of Bisitun.

or Middle Persian : *The Book of Zarēr* (Pahlavi Texts, ed. Jamasp-
Asana), pp. 1-16.

Mitteliranische Manichaica I (ed. Andreas-Henning).

(External candidates must state which option they select.)

Philosophy

1954, 1955 and (provisionally) 1956

Paper 7

1. Kant : *Critique of Pure Reason* (trans. N. Kemp Smith).

Critique of Judgment, Part I : *Critique of Aesthetic Judgment*.
The Moral Law, or Kant's Groundwork of the Metaphysic of
Ethics, ed. Paton (Hutchinson).

Polish Language and Literature

1955 and until further notice

Paper 5

1. "Bogurodzica" and "Żale Matki Boskiej pod Krzyżem"
in Vrtel-Wierczyński's *Wybór tekstów staropolskich do 1543 r.*
(Lwów, 1930), or in Brückner's *Średniowieczna pieśń religijna polska*
(Kraków, 1923).

2. Rej : "Krótka rozprawa" and "Żywot człowieka poczciwego"
(extracts in Brückner's ed. of *Pisma proza i wierszem* (Kraków,
1926), pp. 156-162 and 75-86).

3. Górnicki : “ *Dworzanin polski* ”, I (in Pollak’s ed., Kraków, 1926), pp. 6–16.
4. Kochanowski : *Treny*.
5. From Brückner’s *Sielanka polska XVII wieku* (Kraków, 1922) the following : Simonides’ “ *Żeńcy* ” (pp. 84–91), Zimorowic’s “ *Narzekalnice* ” and “ *Śpiewacy* ” (pp. 119–131).
6. Twardowski : *Nadobna Pasqualina*, III, lines 787–1094.
7. Pasek : *Pamiętniki* (year 1669).
8. Krasicki : *Bajki* (the following : “ *Kulawy i ślepy* ”, “ *Szczur kot* ”, “ *Doktor* ”, “ *Ptaszki w klatce* ”, “ *Filozof* ”, “ *Dewotka* ”, “ *Wilk i owce* ”, “ *Pan i pies* ”, “ *Jaśnie i wilki* ”, “ *Wilk pokutujący* ”, “ *Przyjaciele* ”, “ *Czapla ryby i rak* ”) and *Mikołaja Deświadczyńskiego przypadki* (Bk. I, ch. 1–4) ; Bk. II, ch. 2–4 ; Bk. III, ch. 9–10).
9. Niemcewicz : *Powrót posła* (Act II).
10. From Borowy’s Anthology *Od Kochanowskiego do Staffa* (Lwów, 1930), poems of the following :
 (a) Sęp-Szarzyński (pp. 19–21) ; (b) Morsztyn (pp. 38–42) ; (c) Karpiński (pp. 68–73) ; (d) Książnin (pp. 79–89).

Papers 7 and 8 (a) Special Subject

1. Mickiewicz and Norwid. A general knowledge of their lives and works, with special study of *Ballady i romanse*, *Sonety*, *Pan Tadeusz*, *Zwolon*, *Promethidion*, and *Vade-mecum*.
2. Sienkiewicz and Prus. A general knowledge of their lives and works, with special study of *Bartek zwycięzca*, *Quo vadis*, *Bez dogmatu*, *Powracająca fala*, *Placówka* and *Faraon*.

Portuguese

1954, 1955 and (provisionally) 1956

- Textos Arcaicos* (3rd ed., J. Leite de Vasconcelos).
Cantigas de Amigo (ed. J. J. Nunes, Coimbra, 1926).
 Fernão Lopes : *Chronica de Dom João I, Primeira Parte* (ed. Melo Azevedo, Vol. VII, Bibl. Clássicos Port., 3rd edition, 1915).
 João de Barros : *Década I*.
 Gil Vicente : *Auto da Alma* (ed. A. Bell, 1920, or Ouquella, Lisbon, 1912).
 Diogo do Couto : *Vida de Dom Paulo de Lima* (Bibl. Clássicos Port., Vol. XV).
 Luis de Camões : *Os Lusíadas*, Cantos 9 and 10.
 António Vieira : *Cartas*, Vol. III (ed. J. Lucio de Azevedo, 1928).
 Camilo Castello-Branco : *Luta de gigantes*.
 Oliveira Martins : *Os Filhos de Dom João I*.
 Ferreira de Castro : *Emigrantes*.

Russian Language and Literature

1954 and until further notice

Paper 5

1. Extracts from the following in :—

Н. К. Гудзий, *Хрестоматия по древней русской литературе XI–XVII веков*. (Москва, 1947).
 Митрополит Иларион. «О законе и благодати» (57–60).

- Вел. Кн. Владимир Мономах, «Поучение» (62-66).
 «Слово о полку Игореве» (108-120).
 «Моление Даниила Заточника» (138-145).
 Епифаний Премудрый, «Житие Стефана Пермского» (182-191).
 Афанасий Никитин, «Хождение за три моря» (197-202).
 Кн. Андрей Курбский и царь Иван Грозный, «Переписка» (249-262).
 Протопоп Аввакум, «Житие» (454-65).

These texts are available in photostat copies for the use of students. Internal Students should apply to the library of the School of Slavonic and East European Studies, or to the University Library, for permission to see them ; External Students may purchase copies from the University Library (Photographic Department) at cost price.

2. The following 18th century works :—

- Кн. Антиох Кантемир, «Сатира I»
 М. В. Ломоносов, «Утреннее размышление о Божьем величестве»; «На взятие Хотина»; «На день восшествия на Всероссийский престол императрицы Елисаветы Петровны» (1747).
 Г. Р. Державин, «На смерть кн. Мещерского»; «Фелица» «Бог»; «Водопад»; «Соловей».
 Д. И. Фонвизин, «Недоросль».
 А. Н. Радищев, «Путешествие из Петербурга в Москву» (главы «Новгород», «Бронницы», «Хотилон», и «Завидово»).

Papers 7 and 8 (a), Special Subjects

1. A. Pushkin and N. Gogol. A general knowledge of their lives and literary careers, with special study of :—
 А. С. Пушкин, Лирика; «Борис Годунов»; «Повести Белкина» and Н. В. Гоголь, «Ревизор»; «Мёртвые души».
2. L. Tolstoy. A general knowledge of his life and literary career, with a special study of :—
 «Севастополь»; «Анна Каренина»; «Власть тьмы»; «Что такое искусство?»; «Смерть Ивана Ильича».
3. M. Gorky. A general knowledge of his life and literary career, with a special study of :—
 Рассказы («Макар Чудра», «О чиже который лгал, и о дятле-любителе истины», «Челкаш», «Дело с застёжками», «Супруги Орловы», «Варенька Олесова»); «На дне»; «Мать»; «Дело Артамоновых»; «Речь на открытии Первого всесоюзного съезда советских писателей 17 августа 1934 г.».

Russian Regional Studies

1954 and until further notice

Paper 3

1. Слово о полку Игореве, 1-14. (Буслаев, *Хрестоматия*, 1888, 86-90).
2. Поучение Владимира Мономаха, 10-18. (Буслаев, 75-78).
3. Сборник Святослава 1076 г. (Обнорский, *Хрестоматия*, 1938, 22-23).
4. Договорная грамота Смоленского князя Мстислава Давидовича с Ригию и Готским берегом 1229 г. (Обнорский, 29-32).
5. Договорная грамота Новгорода с великим князем Ярославом Ярославичем 1264-5 гг. (Обнорский, 38-39).

6. Русская Правда. (Обнорский 42-43).
7. Грамота Полоцкого епископа Иакова к рижанам около 1300 г. (Обнорский, 49).
8. Договорная торговая грамота Полоцка с Гигой около 1330 г. (Обнорский, 67-68).
9. Новгородская летопись по Синодальному списку XIII-XIV вв. (Обнорский, 57-60).
10. Духовная грамота Московского князя Дмитрия Ивановича до 1378 г. (Обнорский, 71).
11. Грамота галицкого старосты Бенка 1398 г. (Обнорский, 112).
12. Продажная Хоньки Васковой на Калеников монастырь 1378 г. (Обнорский, 107-109).
13. Повесть временных лет по Лаврентиевскому списку 1377 г. (изд. Арх. Ком. 1910, 55-58; 106-109; 129-134).
14. Летопись по Ипатьевскому списку около 1425 г. (Обнорский, 121-123).
15. Путешествие Афанасия Никитина в Индию 1466-1472 гг. (Гудзий, 197-200).
16. Грамота Псковского князя Ивана Александровича 1463-1465 гг. (Обнорский, 131-132).
17. Псковская судная грамота. (Обнорский, 152-154).
18. Повесть о Дракуле. (Буслаев, 211-215).
19. Задонщина. (Гудзий, 167-170).
20. О житий и о преставлений великого князя Дмитрия Ивановича 1448 г. (Гудзий, 174-177).
21. Стоглав. (Обнорский, 164-166).
22. Домострой. (Обнорский, 160-162).
23. Из переписки кн. Андрея Курбьского. (Обнорский, 174-178).
24. Котошихин «О России в царствование Алексея Михайловича». (Обнорский, 220-221).
25. Протопоп Аввакум, «Житие». (Обнорский, 224-227).

These texts are available in photostat copies for the use of students. Internal Students should apply to the library of the School of Slavonic and East European Studies, or to the University Library, for permission to see them ; External Students may purchase copies from the University Library (Photographic Department) at cost price.

Papers 9 and 10, Special Subject

(a) The Reign of Ivan IV. To be studied in the following authorities :—

Sigismund von Haberstein : *Notes upon Russia* (The Hakluyt Society, London, 1852), Vol. I, pp. 102-116 ; Vol. II, pp. 112-142.

Ivan Perosvetov : (a) *Pervaya chelobitnaya*, pp. 59-69,

(b) *Skazanie o Magmete-saltane*, pp. 71-78.

(from *Chteniya v imperatorskom obshchestve Istorii i Drevnostei Rossiiskikh*, 1908, Vol. I, Moskva).

Hrestomatiya po istorii SSSR, Vol. I (Moskva, 1937), pp. 214-15, 222-23, 229-30.

Sudebnik : *Tsarya i Velikogo Knyazya Ioanna Vasil'evicha* (1550)

(from *Akty istoricheskie*, Vol. I, pp. 219-251. Izdany Arkheograficheskoi Kommissieyu SPB. Para. 1, 4, 5, 26, 28, 32, 49, 52, 53, 62, 68, 70, 71, 72, 78, 80, 81, 86, 87, 88, 90, 91, 98.

Stoglav (1551), chapters 51, 60, 75, 76, 85, 93, 94. Izdanie D. E. Kozhanchikova, 1863, SPB.

Perepiska : *Knyazya Kurbskago s tsarem Ioannom Groznom*

(from *Hrestomatiya po drevnei russkoi literature*, pp. 195-205 (sost. Gudzy, N.K., Moskva, 1936)).

Domostroi, chapters 1, 7, 9, 15, 17-21, 29, 30, 34, 37, 40, 42, 56, 62. (from *Izdanie Obshchestva Istorii i Drevnostei Rossiiskikh*, Moskva, 1908. In *Proceedings*, Vol. II, and separately ; or French edition *Le Domostroi*, translated by M. E. Duchesne, Paris, 1910).

A copie of the privileges graunted by the Emperour of Russia unto the right worshipful felowship of English marchants in 1569 (*Early Travels to Russia and Persia*, Hakluyt Society, 1856, Vol. II, pp. 265-277).

A message unto the quenes excellent Maiestie from th'Emperour his highnes of Moscovia to be done in secret. Nov. 1567. (from *ibid*, pp. 236-9).

Elizabeth to Ivan 18 May, 1570. *The Coppie of the Queens Maiesties Letter to the Emperour of Russia Maii 1570.* (from *ibid*, pp. 290-291).

The following are also recommended :—

The Voyage of Richard Chancellor, 1553. (from *The Principal Navigations. Voyages, Traffiques and Discoveries of the English Nation.* Richard Hakluyt. Vol. II, pp. 224-238. Glasgow, 1903).

The first privileges graunted by the Emperour of Russia to the English Merchants. (from *ibid.*, Vol. II, pp. 297-304).

First Voyage made by Master Anthony Jenkinson toward the land of Russia, 1557. (from *Early Voyages and Travels to Russia and Persia*, Hakluyt Society, 1856, Vol. I, pp. 11-40).

Privileges graunted by the Emperour of Russia to the English Merchants. (from *ibid.*, Vol. II, pp. 288-336).

Of the Russe Commonwealth. Giles Fletcher. (The Hakluyt Society, London, 1856).

(b) The Age of Peter the Great. To be studied in the following authorities :—

(1) Pososhkov : *Kniga o Skudosti i Bogatstve* (ed. Kafengauz, Moscow, 1937), chapters II, III, IV and VII.

(2) Voskresensky : *Zakonodatel'nye Akty Petra I*, Vol. I (Moscow-Leningrad, 1945) :—

1. The Senate—pp. 197, 199, 201, 204, and Procurator General—pp. 308-310.

2. Colleges—pp. 216-217, 218. Synod—pp. 81, (83), (121), and Procurator 109-110.

3. Justice, Code of Laws—pp. 40-41, 107, (30), 132-133.

4. Law of Succession (Conflict with Alexis)—pp. 163-169, 170, 174-176, 177 (113-114).

5. Coronation of Catherine—pp. 179-180.

6. Instructions concerning Gentry—pp. 351-352, 353-354-355.

7. Miscellaneous Orders—against the selling of single peasants, p. 92 ; against abuse of torture, p. 101 ; against forced marriages, p. 103.

8. Education, Schools—pp. 33-34, 241-242. Books, Translations—pp. 34-35, 44, 47-48, 110-111, 112-114, 119, 128-129, 143-144, 148.

9. Letters—pp. 180-182.

10. Historical Notes concerning his reign—pp. 115-117, 150.

Sanskrit**1954, 1955 and (provisionally) 1956****Papers 1 and 2**

For detailed study :—

R̥gveda, i. 41, 42, 143 ; ii. 27 ; iii. 33 ; iv. 19, 33 ; v. 84 ; vi. 50, 74 ;
vii. 46, 54, 57, 76, 83 ; x. 108, 117, 146, 185.

Pāṇini, i. 4. 23–55, with the *Kāśikā* commentary.

Uttararāmacarita.

Meghadūta, i, with Mallinātha's commentary.

For general study (in the examination passages from the following books may be set for translation, together with *general* questions on their subject-matter) :—

Selections, in Böhtlingk : *Sanskrit Chrestomathie* (3rd edition),
from *Aitareya-* and *Śatapatha-brāhmaṇas*.

Manusmṛti, Book 9.

Sāvitryupākhyāna (*Mahābhārata*, *Vanaparvan*).

Bhagavadgītā.

Kālidāsa : *Kumārasambhava*, Canto III.

Ārya Śūra : *Jātakamālā*, I–IX.

Kathāsaritsāgara, Selections in Böhtlingk : *Sanskrit Chrestomathie*
(3rd edition).

Paper 4

Pali :—

Andersen : *Pali Reader*, pp. 1–71.

Prakrit :—

Jacobi : *Ausgewählte Erzählungen in Māhārāṣṭrī*, pp. 1–55.

Avestan :—

Reichelt : *Avesta Reader*, pp. 1–17, 81–86.

Special Subjects

(d) Indian Philosophy :—

Upaniṣads : 1. *Brhadāranyaka* II, 1–5 ; 2. *Īśa* ; 3. *Śvetāśvatara*.
(See R. Hauschild : *Die Śvetāśvatara-Upaniṣad, Eine Kritische Ausgabe mit einer Übersetzung und einer Übersicht über ihre Lehren*, Leipzig, 1927).

Vedāntasāra (ed. 1. Jacob ; 2. M. Hiriyanna).

Annambhaṭṭa : *Tarkasaṃgraha*. (Recommended :—1. A. Foucher :
Le Compendium des Topiques, Adrien-Maisonneuve, Paris, 1949 ;
2. S. Kuppaswami Sastri : *A Primer of Indian Logic* (Madras,
1932) ; 3. Y. V. Athalye, with introduction and notes by R.
Bodas, Bombay Sanskrit Series LV, 1930).

Vijñaptimātratāsiddhi : Vasubandhu, *Viṃśatikā* with commentary ;
edited and translated into French by S. Lévi, *Biblio. de l'Ecole*
des Hautes Etudes, fasc. 245–260, Paris, 1925 and 1932.

(g) Sanskrit Buddhist Literature :—

Avadāna-śataka (ed. Speyer), Nos. 1–10.

Divyāvadāna (ed. Cowell & Neil), xxvi–xxix (pp. 348–434).

Mahāvastu (ed. Senart), Vol. i, pp. 290–366.

Suvarṇabhāṣottamasūtra (ed. Nobel), xix (*Vyāghripāriṣvarta*).

(h) Sanskrit Drama :—

Pratijñāyaugandharāyaṇa.

Mālavikāgnimitra.

Mudrārākṣasa.

(i) Sanskrit Poetics :—

Daṇḍin : *Kāvyādarśa*, i and ii.

Ānandavardhana : *Dhvanyāloka*, i and ii.

Viśvanātha : *Sāhityadarpaṇa*, i, ii and x.

Scandinavian Languages

1954

1. E. V. Gordon : *An Introduction to Old Norse*, extracts I, III, V, VI, VII, VIII, X, XI, XIII and Runic inscriptions.
Eddic Poems : *Völundarkviða*, *Baldrs draumar*, *Atlakviða*.
Prose : *Gunnlaugs saga*.
2. For candidates specializing in Danish :—Henrik Bertelsen : *Dansk sproghistorisk læsebog*, extracts : *Skaanske lov*, *Jydske lov*, *Den gammeldanske lægebog*, *Lucidarius*.
For candidates specializing in Norwegian :—*Udvalgte Afsnit af Konungs Skuggsjá* (ed. Jón Helgason, Schultz, Copenhagen).
For candidates specializing in Swedish :—E. Noreen : *Fornsvensk läsebok*, extracts I, II, VII, XII, XV, XVIII, XXIII, XXXI, XXXIII.
4. Selected authors and texts ; **one** of the following groups :—

Danish

Danske Folkeviser i Udvalg (ed. E. Frandsen).
L. Holberg : *Den politiske Kandstøber*.
J. H. Wessel : *Kærlighed uden Strømper*.
A. Oehlenschläger : *Aladdin*.
S. S. Blicher : *Brudstykker af en Landsbydegns Dagbog*.
H. C. Andersen : *Eventyr og Historier*. Udvalg ved J. Nørvig.
F. Paludan-Müller : *Adam Homo*.
J. P. Jacobsen : *Marie Grubbe*.
Johs. V. Jensen : *Udvalgte Prosastykker* (ed. Borup & Ilsøe).
Et hundrede danske Digte (ed. F. J. Billeskov-Jansen).

Norwegian

Liestøl og Moe : *Norske folkeviser fra middelalderen*.
Petter Dass : *Nordlands Trompet* (ed. Seip).
Holberg : *Jeppe paa Bjerget*.
Wergeland : *Dikt* (ed. E. Høigård).
Asbjørnsen og Moe : *Folke- og Huldreeventyr* (ed. T. Knudsen).
Bjørnson : *Over Evne I*.
Ibsen : *Peer Gynt ; En folkefiende*.
Nils Kjær : *Det lykkelige valg* (ed. M. Sandvei).
Norsk Bokheim, Nynorsk I and II (ed. Sørli og Thesen).

Swedish

Ek och Blomberg : *Svenska folkvisor i urval*.
Dalin : *Sagan om hästen*.
Stiernhielm : *Herkules*.
Poems by Kellgren and Anna Maria Lenngren in *Gustaviansk lyrik i urval* (ed. J. Cornell).
Tegnér : *Frithiofs saga*.
Almquist : *Det går an*.
Strindberg : *Hemsöborna*.
Fröding : *Stänk och flikar*.
Hj. Bergman : *Markurells i Wadköping*.
Poems by Geijer and Tegnér in *Vår litteratur och dess historia*, 3 delen. (ed. R. Hillman and others).

(External candidates must state which group they select.)

1955

1. E. V. Gordon : *An Introduction to Old Norse*, extracts I, III, V, VI, VII, VIII, X, XI, XIII and Runic inscriptions.
Eddic Poems : *Völundarkviða*, *Baldrs draumar*, *Atlakviða*.
Prose : *Gunnlaugs saga*.

2. For candidates specializing in Danish :—Henrik Bertelsen : *Dansk sproghistorisk læsebog*, extracts : *Skaanske lov, Jydske lov, Den gammeldanske lægebog, Lucidarius*.

For candidates specializing in Norwegian :—*Udvalgte Afsnit af Konungs Skuggsjá* (ed. Jón Helgason, Schultz, Copenhagen).

For candidates specializing in Swedish :—E. Noreen : *Fornsvensk läsebok*, extracts I, II, VII, XII, XV, XVIII, XXIII, XXXI, XXXIII.

4. Selected authors and texts : one of the following groups :—

Danish

Danske Folkeviser i Udvalg (ed. E. Frandsen).

L. Holberg : *Den Stundesløse*.

J. H. Wessel : *Kærlighed uden Strømper*.

A. Oehlenschläger : *Aladdin*.

M. Goldschmidt : *Maser. Avrohmche Nattergal* (ed. K. Jensenius).

H. C. Andersen : *Eventyr og Historier*. Udvalg ved J. Nørvig.

F. Paludan-Müller : *Adam Homo*.

Herman Bang : *Ved Vejen*.

Kaj Munk : *Ordet* (ed. Niels Nielsen).

Et hundrede danske Digte (ed. F. J. Billeskov-Jansen).

Norwegian

Liestøl og Moe : *Norske folkeviser fra middelalderen*.

Petter Dass : *Nordlands Trompet* (ed. D. A. Seip).

L. Holberg : *Jeppe paa Bjerget*.

H. Wergeland : *Dikt* (ed. E. Høigård).

Asbjørnsen og Moe : *Folke- og Huldreeventyr* (ed. T. Knudsen).

B. Bjørnson : *En fallit*.

H. Ibsen : *Peer Gynt ; En folkefiende*.

J. Bojer : *Den siste viking*.

Norsk Bokheim, Nynorsk I and II (ed. Sørli og Thesen).

Swedish

Ek och Blomberg : *Svenska folkvisor i urval*.

O. von Dalin : *Sagan om hästen*.

G. Stiernhielm : *Herkules*.

Poems by Kellgren and Anna Maria Lenngren in *Gustaviansk lyrik i urval* (ed. J. Cornell).

E. Tegnér : *Frithiofs saga*.

K. J. L. Almquist : *Det går an*.

A. Strindberg : *Lycko-Pers resa* (ed. H. Gullberg).

V. von Heidenstam : *Dikter* (1895).

H. Martinson : *Nässlorna blomma*.

Poems by Geijer and Tegnér in *Vår litteratur och dess historia*, 3 delen. (ed. R. Hillman and others).

1956 (provisional)

1. E. V. Gordon : *An Introduction to Old Norse*, extracts VI, VII, VIII, IX, X, XIII.

Eddic Poems : *Hávamál*, vv. 1-77 ; *Atlakviða*.

Prose : *Gunnlaugs saga* (Viking Society edition) ; *Gylfaginning* (in Snorri Sturluson : *Edda*, ed. by Anne Holtsmark and Jón Helgason. Nordisk filologi ; Tekster, 1. Munksgaard, Copenhagen).

2. For candidates specializing in Danish :—Henrik Bertelsen : *Dansk sproghistorisk læsebog*, extracts : *Skaanske lov, Jydske lov, Den gammeldanske lægebog, Lucidarius*.

For candidates specializing in Norwegian :—*Udvalgte Afsnit af Konungs Skuggsjá* (ed. Jón Helgason, Schultz, Copenhagen).

For candidates specializing in Swedish :—E. Noreen : *Fornsvensk läsebok*, extracts I, II, VII, XII, XV, XVIII, XXIII, XXXI, XXXIII.

4. Selected authors and texts : one of the following groups :—

Danish

Danske Folkeviser i Udvalg (ed. E. Frandsen).

L. Holberg : *Den Stundesløse*.

J. Baggesen : *Labyrinthen*.

A. Oehlenschläger : *Hakon Jarl*.

M. Goldschmidt : *Maser. Avrohmche Nattergal* (ed. K. Jensenius).

H. C. Andersen : *Eventyr og Historier*. Udvalg ved J. Nørvig.

S. Kierkegaard : *In vino veritas* (ed. E. Schmidt-Petersen).

Herman Bang : *Ved Vejen*.

Kaj Munk : *Ordet* (ed. Niels Nielsen).

Et hundrede danske Digte (ed. F. J. Billeskov-Jansen).

Norwegian

Liestøl og Moe : *Norske folkeviser fra middelalderen*.

Petter Dass : *Nordlands Trompet* (ed. D. A. Seip).

L. Holberg : *Erasmus Montanus*.

H. Wergeland : *Dikt* (ed. E. Høigård).

Asbjørnsen og Moe : *Folke- og Huldreeventyr* (ed. T. Knudsen).

B. Bjønson : *En fallit*.

H. Ibsen : *Peer Gynt ; Vildanden*.

J. Bojer : *Den siste viking*.

Norsk Bokheim, Nynorsk I and II (ed. Sørli og Thesen).

Swedish

Valda stycken av svenska författare 1526–1732 (ed. E. Noreen), extracts II, 4 ; III, 2 ; VI ; VIII ; IX ; XIV ; XV ; XVIII, 1–3 ; XXI ; XXVI, 2 ; XXXV, 5.

C. M. Bellman : *Dikter i urval* (ed. O. Byström).

C. J. L. Almquist : *Törnrosens bok* (ed. H. Gullberg).

J. L. Runeberg : *Älgskyttarne* (ed. E. Pontán).

J. A. Strindberg : *Lycko-Pers resa* (ed. H. Gullberg).

V. von Heidenstam : *Dikter* (1895).

Selma Lagerlöf : *Jerusalem I*.

Hj. Bergman : *Swedenhielms* (ed. H. Gullberg).

H. Martinson : *Nässlorna blomma*.

Svensk poesi (ed. S. Selander and N. Johnson).

Serbo-Croat Language and Literature

1955 and until further notice

Paper 5

1. Живот св. Симеуна, од св. Саве, pp. 9–14 (Chapters VIII and IX) in P. J. Šafařík, *Dřevního Písemnictví Jihoslovanův* (Prag, 1873). (Život sv. Symeona od sv. Sávy).
2. Теодосије, Живот светог Саве, p. 20, l. 21–p. 24, l. 26 in Dj. Daničić, Живот светог Саве написао Доментијан (in error for Теодосије).
3. Extracts from the works of the following writers in Branko Vodnik, *Pregled hrvatsko-srpske književnosti u ogledima* (Zagreb, 1923) : Menčetić and Držić (pp. 28–35) ; Čubranović (pp. 36–39) ; Marulić

(pp. 43-48) ; Lukić (pp. 53-57) ; Hektorović (pp. 58-67) ; Marin Držić (pp. 81-96) ; Ranjina and Zlatarić (pp. 114-121) ; Gundulić (pp. 151-171) ; Palmotić (pp. 185-204).

4. Matija Reljković : *Satir*, Part I, "Popravljanje Slavonije posli istiranog Turčina" (pesma 3) and "Satir kazuje, da u Slavoniji imaju skule—ali kakove?" (pesma 5). (Branko Vodnik, *op. cit.*, pp. 296-301 ; or in David Bogdanović's ed. (Zagreb, 1930), pp. 95-98 and pp. 101-104, line 70.
5. Доситеј Обрадовић, Живот и Прикљученија, Part II, pp. 317-323 397-411. (Басне, Leipzig, 1788).¹

Papers 7 and 8 (a) Special subjects

1. The work of Vuk Karadžić, with special reference to his collections of Serbo-Croat traditional ballads.
2. Serbo-Croat lyric poetry from 1850 to the present day.

Sinhalese

For Internal Students only.

1954

Paper 1²

Epigraphia Zeylanica, Vol. III, No. 17, Tōṇigala Rock-Inscription ; Vol. IV, No. 37, Nilagama Rock-Inscription of Daḷamugalan ; Vol. I, No. 4, Anurādhapura Slab-Inscription of Kassapa V. *Sikha-valaṇḍa* (ed. D. B. Jayatilaka, 1934).

Paper 2

Dharmapradīpikāva, pp. 1-102 : comments 1-13 (ed. Dharmārāma, 1915).

Pūjāvaliya, chapters 12-16 (ed. D. E. Hettiaratchi, 1948).

Kaṣṣilūmiṇa, cantos i-v (ed. Maḍugallē Siddhārtha, 1926).

Sidat-saṅgarā, chapters I-X.

Tisara-saṇḍeśaya (ed. D. B. Jayatilaka, 1935).

Paper 3

Buduguṇālaṃkāraya, vv. 78-329 (ed. Valāṇe Dhammānanda, 1930) *Dunuṇṇila Haṭṭana*.

Folk Songs of the Sinkalese (ed. W. A. de Silva & G. P. Malalasekera, 1935), pp. 84-141.

John de Silva : *Śrī Wickrama Rājasinha* (Laṅkābhinava Viśruta Press, Colombo, 2469, 1925).

1955

Epigraphia Zeylanica, Vol. III, No. 17, Tōṇigala Rock-Inscription ; Vol. IV, No. 37, Nilagama Rock-Inscription of Daḷamugalan ; Vol. I, No. 4, Anurādhapura Slab-Inscription of Kassapa V.

Sikha-valaṇḍa (ed. D. B. Jayatilaka, 1934).

Dharmapradīpikāva, pp. 1-102 : comments 1-13 (ed. Dharmārāma, 1915).

¹ Photostat copies of these passages are obtainable from the School of Slavonic and East European Studies (for Internal Students), or from the University Library (Photographic Department) (for External Students).

² In 1954 only, candidates whose mother tongue is not Sinhalese may, if they wish, offer in place of Paper I an oral examination which shall test scholarship as well as command of the spoken language.

- Pūjāvaliya*, chapters 12–16 (ed. D. E. Hettiaratchi, 1948).
Kavsilumiṇa, cantos i–v (ed. Maḍugallē Siddhārtha, 1926).
Sidat-saṅgarā, chapters I–X.
Budugunālamkāraya, vv. 78–329 (ed. Valāṇe Dhammānanda, 1930).
Dunuvila Haṭana
Folk Songs of the Sinhalese (ed. W. A. de Silva and G. P. Malalasekera, 1935), pp. 84–141.
 John de Silva : *Śrī Wickrama Rājasinha* (Laṅkābhinava Viśruta Press, Colombo, 2469, 1925).

1956 (provisional)

- Epigraphia Zeylanica*, Vol. I, No. 10, Riṭigala Inscriptions ; Vol. III, No. 7, Ruanvālisāya Pillar Inscription of the reign of Buddhādāsa ; No. 28, Colombo Museum Pillar Inscription of Kassapa IV ; Vol. II, No. 13, The Slab Inscription of Kīrti-Niśśaṅka-Malla at Ruanvāli-Dāgāba.
Sikha-valaṇḍa (ed. D. B. Jayatilaka, 1934).
Dharmapradīpikāva, pp. 1–102 : comments 1–13 (ed. Dharmārāma, 1915).
Pūjāvaliya, chapters 12–16 (ed. D. E. Hettiaratchi, 1948).
Kavsilumiṇa, cantos i–v (ed. Maḍugallē Siddhārtha, 1926).
Sidat-saṅgarā, chapters I–X.
Tisara-saṇḍeśaya (ed. D. B. Jayatilaka, 1935).
Budugunālamkāraya, vv. 78–329 (ed. Valāṇe Dhammānanda, 1930).
Dunuvila Haṭana.
Folk Songs of the Sinhalese (ed. W. A. de Silva & G. P. Malalasekera, 1935), pp. 84–141.
 John de Silva : *Śrī Wickrama Rājasinha* (Laṅkābhinava Viśruta Press, Colombo, 2469, 1925).

South East European Regional Studies

1955 and until further notice

Papers 9 and 10, Special Subject

- (d) The Kingdom of Serbia, 1882–1914. To be studied in the following authorities :—

Jasa Prodanović : *Ustavni razvitak i ustavne borbe u Srbiji* (Beograd, 1936, pp. 306–334, text of the 1888 Constitution of Serbia).

A. F. Pribram : *The Secret Treaties of Austria-Hungary 1879–1914* (Harvard Univ. Press, 1920, pp. 51–63).

Svetozar Marković : *Srbija na Istoku* (Beograd, 1946).

Nikola P. Pašić : *Speeches and Letters. Povodom decetgodišnice Pašićeve smrti*, Beograd, 1937, pp. 110–122, 145–164.

The following books are also recommended :—

Slobodan Jovanović : *Vlada Milana Obradovića* (Beograd, 1927, Vols. I and II).

Slobodan Jovanović : *Vlada Alexandra Obrenovića* (Beograd, 1931).

S. Protić : *Odlomci iz ustavne i narodne borbe u Srbiji*, Vol. II (Beograd, 1912).

Spanish

1954

Poema de mio Cid (Clásicos castellanos), Cantar II.

Juan Ruiz : *Libro de buen amor*.

Juan Manuel : *El conde Lucanor*.

Fernando de Rojas : *La Celestina*.

R. Menéndez Pidal : *Flor Nueva de Romances Viejos*

One of the following groups :—

- I. Garcilaso de la Vega : *Obras completas*.
 Jorge de Montemayor : *La Diana*.
 Alonso de Ercilla : *La Araucana* (Selection by J. Ducamin, Garnier Frères).
 Gil Vicente : *Don Duardos* (ed. Dámaso Alonso).
- II. Miguel de Cervantes : *Don Quijote* ; *El celoso extremeño*.
 Francisco de Quevedo : *Los sueños*.
 Pedro Calderón de la Barca : *La vida es sueño* ; *El alcalde de Zalamea* ; *El Príncipe constante* ; *No hay más fortuna que Dios* (ed. Parker, M.U.P.).
- III. Juan Pablo Forner : *Exequias de la lengua castellana*.
 Leandro Fernández de Moratín : *La comedia nueva* ; *El sí de las niñas*.
 A. García Gutiérrez : *El Trovador*.
 José de Espronceda : *El diablo mundo*.
 José Zorilla : *Don Juan Tenorio* ; *El zapatero y el rey*.
- IV. Gustavo Adolfo Bécquer : *Rimas*.
 Benito Pérez Galdós : *El abuelo* (novela) ; *Misericordia* ; *Gloria*.
 José Hernández : *Martín Fierro*.
 Ramón Pérez de Ayala : *Tigre Juan*.
 Rubén Darío : *Prosas profanas* ; *Cantos de vida y esperanza*.
 Ricardo Güiraldes : *Don Segundo Sombra*.

(External candidates must state which group they select.)

1955 and (provisionally) 1956

Poema de mto Cid (Clásicos castellanos) : in 1955, Cantar III ; in 1956, Cantar I.

Juan Ruiz : *Libro de buen amor*.

Gonzalo de Bercio : *Milagros de Nuestra Señora* (Clásicos castellanos).

Fernando de Rojas : *La Celestina*.

R. Menéndez Pidal : *Flor Nueva de Romances Viejos*.

One of the following groups :—

- I. Garcilaso de la Vega : *Obras completas*.
 Jorge de Montemayor : *La Diana*.
 Alonso de Ercilla : *La Araucana* (Selection by J. Ducamin, Garnier Frères).
 Gil Vicente : *Don Duardos* (ed. Dámaso Alonso).
 Juan de Valdés : *Diálogo de la lengua*.
- II. Miguel de Cervantes : *Don Quijote* ; *El celoso extremeño*.
 Francisco de Quevedo : *Los sueños*.
 Pedro Calderón de la Barca : *La vida es sueño* ; *El alcalde de Zalamea* ; *El Príncipe constante* ; *No hay más fortuna que Dios* (ed. Parker, M.U.P.).
- III. Juan Pablo Forner : *Exequias de la lengua castellana*.
 S. Estebáñez Calderón : *Escenas andaluzas*.
 A. García Gutiérrez : *El Trovador*.
 José de Espronceda : *El diablo mundo*.
 José Zorilla : *Don Juan Tenorio* ; *El zapatero y el rey*.
- IV. Gustavo Adolfo Bécquer : *Rimas*.
 Benito Pérez Galdós : *El abuelo* (novela) ; *Misericordia* ; *Gloria*.
 José Hernández : *Martín Fierro*.
 Ramón Pérez de Ayala : *Tigre Juan*.
 Rubén Darío : *Prosas profanas* ; *Cantos de vida y esperanza*.
 Ricardo Güiraldes : *Don Segundo Sombra*.

(External candidates must state which group they select.)

Tamil

For Internal Students only.

1954, 1955 and (provisionally) 1956

- Tēvāram*, 6th Tirumurai, Patikams 1-15.
Kambaramāyanam, *Āyōttiya Kāntam*, Patalam 3.
Kalingattupparaṇi (ed. Paḷanivēl Pillai), 8 and 12.
 Maraimalai Atikal : *Sakuntala Nātakam*.
 Vaiyapuri Pillai : *Ilakkiya Cintanaikal* (Nava Bharata Publishing Co., Madras).
South Indian Inscriptions, Vol. 3, pp. 1-39 (Government Press, Madras).
Kalittokai, *Pālaikkali*, with the commentary of Naccinārkkinīyar, 1-10.
Kuruntogai, 1-20 (ed. Sāminātha Aiyar).
Puranānūru, 80-95 (ed. Duraisāmi Pillai).
Pattuppāṭṭu, *Pattinappālai* (ed. Sāminātha Aiyar).
Silappatikāram, *Nādukān Kādai* (ed. Sāmiuātha Aiyar.)
Tirukkural, *Arasiyil*, verses 381-480, with the commentary of Parimēlaḷagar.
Nannūl, with commentary.
Tolkāppiyam, *Porulatikāram*, *Aham* and *Puram*, with the commentary of Naccinārkkinīyar.

Turkish

1954

- A. Tietze & S. Lisie : *Türkisches Lesebuch für Ausländer* (Istanbul, 1943).
 Baki Süha Ediboğlu : *Türk şiirinden örnekler* (Ankara, 1944).
 Refik Halit Karay : *Memleket hikâyeleri*.
 Ya'qūb Qadrī : *Nūr Baba*.
 'Alī Jānib : *Edebiyyāt* (Istanbul, 1926).
 Pechevī : *Ta'rikh* II, pp. 163-290 (the Reign of Mehmed III).
Neşri Tarihi, I (Ankara, 1949), pp. 1-190.

Arabic texts :—

Ibn al-Ṭiqṭaqā' : *al-Fakhri* (the Reigns of Hārūn ar-Rashīd, Amīn and Ma'mūn).

Qur'ān, *sūrat al-baqarah* and *sūrat al-mā'idah*.

Persian texts :—

Gulistān, Books I and II, without *Muqaddima*.

1955 and (provisionally) 1956

- Yaşar Nabi : *Türk edebiyatının en güzel hikâyeleri* (Ankara, 1947).
 Baki Süha Ediboğlu : *Türk şiirinden örnekler* (Ankara, 1944).
 Yakup Kadri Karaosmanoğlu : *Bir sürgün* (Istanbul, n.d.).
 'Abdülḥaqq Hāmid : *Ṭāriq* (Istanbul, 1925).
 'Alī Jānib : *Edebiyyāt* (Istanbul, 1926), pp. 5-7, 31-54, 114-116, 133-143, 264-366.
 E. J. W. Gibb : *History of Ottoman Poetry*, VI (London, 1909), pp. 1-96, 126-164, 240-256.
 Pertev Naili Boratav—Halil Vedat Fıratlı : *Izahlı Halk Şiiri Antolojisi* (Ankara, 1943).
Al-faraj ba'd al-shidda, in H. Vambéry : *Altosmanische Sprachstudien* (Leiden, 1901), pp. 38-61.
 Pechevi : *Ta'rikh* II, pp. 290-398 (the reigns of Ahmed I, Mustafa I, Osman II).
Neşri Tarihi, I (Ankara, 1949), pp. 146-242.

Arabic texts :—

Ibn al- Tīqṭaqā : *al-Fakhri* (the reigns of Hārūn ar-Rashīd, Amīn and Ma'mūn).

Qur'ān, *sūrat al-baqarah* and *sūrat al-mā'idah*.

Persian texts :—

In 1955, *Gulistān*, Books I and II, without *Muqaddima* ;

In 1956, Hāfiz : *Fifty Odes of Hāfiz* (ed. A. J. Arberry, Cambridge), Odes 1-10.

Firdausī : *Shāhnāma* (ed. Pizzi), pp. 156-175.

Mukhtasari Seljuqnāma-yi Ibn Bibi (Houtsma, Recueil, iv), pp. 33-59.

Urdu

For Internal Students only.

1954

Muḥammad Husain Āzād : *Āb-i Hayāt*, pp. 86-96 ; 111-123, line 11 ; 128 ; 129-228, omitting pp. 137-48 ; 180, line 13-183 ; 196, line 16-201 (Lahore, 14th edition).

Mīr Anīs : *Marṣia* beginning “*jab gaṭa'ki musāfat-i shab āftāb ne.*”

Divān-i Ghālib : Ghazals no. 25, 35, 39, 45, 54, 56, 62, 67, 90, 100, 101, 105, 106, 109, 113, 114, 116, 135, 137, 144, 146, 147, 154, 160, 164, 176, 193, 198, 208, 210 (numbering as in Bayān-i Ghālib, Lahore, 4th ed., 1946).

Iqbāl : *Bāng-i Dirā*, pp. 252-322 (Lahore, 10th edition).

Mīr Amman : *Bāgh o Bahār, Sarguzasht Āzād Bakht Bādshāh ki.*

Nazir Ahmad : *Taubat un-Naṣūh.*

Ratn Nāth Sarśār : *Fasāna-i Āzād* (Selections, Vol. I).

Altāf Husain Hālī : *Shi'r o Shā'irī.*

1955 and (provisionally) 1956

Muḥammad Husain Āzād : *Āb-i Hayāt*, pp. 86-96 ; 111-123, line 11 ; 129 ; 129-228, omitting pp. 137-48 ; 180, line 13-183 ; 192, line 16-201 (Lahore, 14th edition).

Mīr Anīs : *Marṣia* beginning “*jab gaṭa'ki musāfat-i shab āftāb ne.*”

Divān-i Ghālib : Ghazals no. 25, 35, 39, 45, 54, 56, 62, 67, 90, 100, 101, 105, 106, 109, 113, 114, 116, 135, 137, 144, 146, 147, 154, 160, 164, 176, 193, 198, 208, 210 (numbering as in Bayān-i Ghālib, Lahore, 4th ed., 1946).

Iqbāl : *Bāng-i Dirā*, pp. 252-322 (Lahore, 10th edition).

Mīr Amman : *Bāgh o Bahār, Sarguzasht Āzād Bakht Bādshāh ki.*

Nazir Ahmad : *Taubat un-Naṣūh.*

Hādī Hasan Rusvā : *Umrāo Jān Adā*, pp. 26-166 (Lucknow, 1938 edition).

Altāf Husain Hālī : *Shi'r o Shā'irī.*

UNIVERSITY OF LONDON



REGULATIONS FOR THE M.A. AND D.LIT. DEGREES for External Students

These regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the year preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations, which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1
September, 1953

MASTER OF ARTS EXAMINATION

REGULATIONS FOR THE REGISTRATION OF EXTERNAL STUDENTS FOR HIGHER DEGREES

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma or postgraduate certificate will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry of the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee, provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and withdraws, fails, or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required to cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted. A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed in the Regulations, obtain the necessary entry papers, and return them to the University with the examination fee.

FEES							£	s.
Registration Fee	..	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	..	2	2

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the examination each candidate must (a) have obtained the degree of Bachelor of *this* University not less than two academic years previously (in exceptional cases this interval may be reduced); (b) have complied with the special qualifications required under the scheme of examination for the relevant branch of the M.A. Examination; and (c) have been registered as an External Student preparing for the M.A. Examination at least 12 months before the last date of entry.

2. Candidates who are required to take qualifying papers at B.A. Honours solely with a view to a subsequent entry to the M.A. Examination must make their entry by the date prescribed for the B.A. Examination, and must have applied for approval of candidature four months before the last date of entry; but in no case shall their names appear on the B.A. Honours Pass List for the year.

3. Candidates who have taken the M.A. Degree in one branch or in one of the languages included in the branches of Mediaeval and Modern Languages, Oriental Languages, or Slavonic and East European Studies, may enter in another branch or another language at any subsequent M.A. Examination, provided they comply with the regulations in all respects.

4. Candidates who have taken the M.Sc. Degree in Education, Geography, Mathematics or Psychology, will not be permitted to proceed to the corresponding M.A. Degree.

DATE OF EXAMINATION

The examination shall take place once in each year, and the written examination shall commence on the fourth Monday in May, or, if that

day be Whit-Monday, on the Tuesday immediately following, but re-examination of the thesis or dissertation of a candidate who has been referred may be arranged, if required, in the following December.

ENTRY TO EXAMINATION

The candidate list closes on 1 February, except in the case of Mathematics, for which examination it closes on 1 January. Any External Student duly registered for the examination may make his entry at any time during the six weeks preceding the dates specified above ; no entry can be accepted after the candidate list has been closed.

Every candidate who submits a thesis or dissertation must, when making his entry, forward the original copy of the approved syllabus. Three copies of his thesis or dissertation, of which two copies must be bound in accordance with the regulations obtainable from the External Registrar, must be submitted to the External Registrar not later than 1 March.

A candidate who has been referred and permitted to re-present his revised thesis or dissertation for examination in the following December must make his entry not later than 15 October and must submit the copies of his revised thesis or dissertation not later than 1 November.

EXAMINATION FEES

1. Every candidate must pay a fee of £15 15s.
2. A referred candidate who is exempt from either the papers or the thesis or dissertation shall be charged half the ordinary M.A. fee for re-entry.
3. B.A. Honours Examination (qualifying for M.A.). For each paper taken, £2 2s. (maximum £13 13s.). Special *ad hoc* examination £5 5s.
4. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."
5. A candidate who withdraws from the examination after the last date of entry but not later than 15 April may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. x).

SCHEME OF EXAMINATION

The M.A. Degree is conferred in the following branches :—

Archaeology	Mediaeval and Modern Languages
Architecture	Oriental Languages
Classics	Comparative Philology
Education	Comparative Philology (Phonetics)
Geography	Philosophy
History	Psychology
Mathematics	Slavonic and East European Studies
	Sociology

The thesis or dissertation must be written in English.

A candidate who submits a thesis or dissertation shall be required to bring with him to the oral examination a copy paged in the same way as the three copies submitted for examination.

REFERENCE

A candidate who is permitted by the regulations to offer a thesis or dissertation and written papers may, if the examiners see fit, be exempted on re-entry either from presentation of the thesis or dissertation or from the written papers. In either case the examiners may, if they so desire, examine the candidate again orally on re-entry.

A candidate who has been exempted from re-examination in the written papers may, if the examiners see fit, be permitted to re-present his revised thesis or dissertation for examination in the following December.

TIME TABLE

The order of the examination will be sent to candidates as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

The names of candidates who satisfy the examiners will be arranged in alphabetical order in the several branches in a list to be published at the University. A mark of distinction will be placed against the names of those candidates who show exceptional merit.

A copy of the Pass List will be sent to each successful candidate. An individual communication will be sent to each unsuccessful candidate.

THESES AND DISSERTATIONS

Copies of all successful theses or dissertations, together with any subsidiary contributions submitted, will be deposited for reference in the University Library.

Any copies of theses and dissertations which are not required by the University after the examination has been completed will be returned to the candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in July.

2. A diploma for the Degree of M.A. under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

RESEARCH FUND

The Senate has at its disposal a Research Fund from which grants may be made to individuals for the provision of materials and apparatus for specific projects of research. Any candidate proceeding to an External Higher Degree who desires to be considered as an applicant for a grant should in the first place communicate with the External Registrar.

SYLLABUSES

(A list of all the set books and special subjects will be found in the Appendix to these regulations.)

Archaeology

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Candidates for the M.A. Degree in Archaeology will be required to pass as a qualifying examination either the Academic Diploma Examination in Archaeology, or such examination as may be prescribed by the University, unless exempted therefrom in special cases. A candidate who has taken an Archaeological subject, or subjects, as part of his course for a degree in this or another University, or for an approved Diploma in certain approved educational institutions of University rank, and who complies with the regulations in all other respects, may apply for exemption from the qualifying examination.

Not less than one year before entry to the examination the candidate shall submit for the approval of the University the title of the subject in which he proposes to present himself. Applications must be submitted in duplicate on the prescribed form and must include a clearly stated syllabus of the subject. Candidates are advised to submit their proposals at the earliest possible moment.

The University's approval of the title and of the syllabus of the subject, whether in their original or in an amended form, will be communicated to the candidate in writing, and on this the examination will be based. This syllabus of the subject must be returned to the University when the candidate makes his entry.

The examination shall consist of five written papers, one of which shall be an essay paper on the approved syllabus. In place of this essay paper candidates may, with the approval of the University, submit a thesis written on a special topic to be sanctioned by the University, and they are recommended to do so provided that they have the necessary facilities. In addition, candidates may, at the discretion of the examiners, be required to present themselves for an oral examination.

Architecture

The regulations and syllabuses are published in a separate pamphlet, which may be obtained on application to the External Registrar.

Classics

In 1954 only :—

All candidates must have obtained the degree of Bachelor of *this* University less than two academic years previously.

Candidates for the Degree of M.A. in Classics who have not previously obtained First or Second Class Honours in Classics, Greek or Latin at B.A. Honours in this University, or in the Classics School of a University approved for the purpose, will be required, before proceeding to the M.A. Examination, to take one Composition Paper (**either** Latin **or** Greek prose) and two papers in Unseen Translation (**either** Latin **or** Greek) at B.A. Honours in Classics, and to reach at least Second Class Honours Standard.

The examination in Classics will be divided into the following five sections, of which candidates must offer **one** :—

- A. Scholarship and Literature.
- B. Ancient Philosophy.
- C. Ancient History.

D. Classical Archaeology.

E. Comparative Philology of Greek and Latin.

(Candidates must state, when registering, which section they select.)

In each section, work of a high quality in a portion of the papers will be allowed to compensate for work of a less high quality in other portions of them.

Candidates must in addition offer a special subject, to be approved by the University, on which subject two papers will be set.

A.—Scholarship and Literature

[Eight papers and an oral examination.]

1. Translation into Greek prose or Latin prose at the choice of the candidate.

2. Translation from Greek.

3. Translation from Latin.

4. (a) Questions on the forms, constructions, and metre of Greek, with short passages from Greek authors for interpretation and emendation.

(b) The history of Greek Literature.

5. (a) Questions on the forms, constructions, and metre of Latin, with short passages from Latin authors for interpretation and emendation.

(b) The history of Latin Literature.

6. Questions on the general principles of textual criticism (including the palaeography and history of **either** Greek **or** Latin MSS.), with special reference to the text of an author or portion of an author, and on the history of scholarship as applied to the text of that author. Four authors (one Greek poet, one Greek prose writer, one Latin poet, one Latin prose writer) to be prescribed, from which the candidate should select **one, and state his choice when registering.**

7 and 8. Papers on the approved special subject.

B.—Ancient Philosophy

[Eight papers and an oral examination.]

1. The *Republic* of Plato.

2. The *Nicomachean Ethics* of Aristotle.

3. Plato and his contemporaries.

4. Aristotle and his contemporaries.

5 and 6. Pre-Platonics and Post-Aristotelians : in both papers there will be questions on each subject. In these two papers a candidate may devote all or most of his attention to one of the two groups of Philosophers concerned.

7 and 8. Papers on the approved special subject.

Papers 3, 4, 5 and 6 will contain short passages for translation and comment.

C.—Ancient History

[Eight papers and an oral examination.]

1. General Greek History from 776 to 146 B.C.

2. A paper on a special set period of Greek History.

3. General Roman History from 753 B.C. to A.D. 180.

4. A paper on a special set period of Roman History.

5. Questions on authorities for the special period of Greek History, with passages for translation and comment.

6. Questions on authorities for the special period of Roman History, with passages for translation and comment.

7 and 8. Papers on the approved special subject.

D.—Classical Archaeology

[Seven papers and an oral examination.]

1. Architecture, including the chief buildings of Athens and Rome.

2. Sculpture and Sculptors.

3. Painting, including vases ; coins ; gems.

4. Religion, including cults and myths ; daily life, including customs and dress.

5. Epigraphy.

6 and 7. Papers on the approved special subject.

Papers 1-4 will include passages from ancient authors for translation and comment.

In the oral examination the candidate will be required to identify, decipher and comment upon works of art, including inscriptions, and other antiquities.

E.—Comparative Philology of Greek and Latin

[Seven papers and an oral examination.]

1. The general principles and methods of Comparative Philology including the elements of Phonetics. The history of the Indo-European family of languages, with particular reference to ancient Greek and Latin. The outlines of the development and interrelations of the various Communities speaking Indo-European languages in prehistoric periods.

2 and 3. The history of the sounds, words, and significations of ancient Greek, including the dialects, and of Latin, including popular Latin, and of the other cognate dialects of ancient Italy, in so far as they bear directly upon Latin.

4 and 5. The history of the forms and constructions of ancient Greek, including the dialects, and of Latin, including popular Latin, and of the other cognate dialects of ancient Italy, in so far as they bear directly upon Latin.

6 and 7. Papers on the approved special subject.

In and after 1955 :—

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously (see qualifications for Admission, p. 403). If they have not previously obtained *either* a First or Second Class Honours Degree in Classics or Latin or Greek at this or some other University in the United Kingdom, *or* some other degree recognised by this University as an equivalent qualification in Classics, they will be required, before registering for the M.A. Examination, to take at the B.A. Honours Examination in Classics either (a) the paper of translation into Latin (or Greek) prose and the two papers of unseen translation from Latin (or Greek), or (b) the four unseen translation papers in both languages ; in which they shall qualify by reaching the standard demanded for Second Class Honours.

The examination in Classics will be divided into six sections of which candidates must offer one.

In each section work of a high quality in a portion of the papers will be allowed to compensate for work of a less high quality in other portions of them.

The examination shall be *either* (i) with thesis, *or* (ii) without thesis.

(i) The **examination with thesis** will consist of :—

(a) A thesis on a subject to be approved by the University at the time of registration. It is not expected that the length of the thesis, except in special cases, should exceed twenty thousand words.

(b) An oral examination which shall be mainly related to the subject of the thesis.

(c) A written examination consisting of *one* paper on the general background of the thesis and *two* papers selected from the list of subjects prescribed for the section offered by the candidate.

(Candidates must state, when registering, which section and subjects they select.)

(ii) The **examination without thesis** will consist of :—

(a) Three papers selected (where a choice is available) from the list of subjects prescribed for the section offered by the candidate.

(b) Two papers on a special subject, to be approved by the University at the time of registration. The special subject must not appreciably overlap any of the selected prescribed subjects.

(c) An oral examination.

(Candidates must state, when registering, which section and subjects they select.)

The following are the sections in Classics :—

Section A.—Scholarship and Literature

1. Questions on Greek forms, constructions, and metres with short passages from Greek authors for interpretation and emendation. Questions on the history of Greek Literature.

2. Questions on Latin forms, constructions, and metres with short passages from Latin authors for interpretation and emendation. Questions on the history of Latin Literature.

3. Questions on the general principles of textual criticism (including the palaeography and history of either Greek or Latin MSS.), with special reference to the text of an author or a portion thereof, and on the history of scholarship as applied to the text of that author. Four authors (one Greek poet, one Greek prose writer, one Latin poet, one Latin prose writer) to be prescribed (see Appendix of set books and Special subjects), from which the candidate should select one **and state his choice when registering.**

4. Translation from Greek *or* from Latin.

Section B.—Ancient Philosophy

1. Greek Philosophy down to and including Socrates.

2. Plato and Aristotle.

3. Stoicism and Epicureanism.

4. The *Republic* of Plato.

5. The *Nicomachean Ethics* of Aristotle.

All the papers will contain passages for translation and comment.

Section C.—Ancient History

1. Ancient Civilisation. This paper will be divided into the following four sections ; candidates will be required to answer questions from at least two :—

- (i) Social and Economic History.
 - (ii) History of Literature.
 - (iii) Art and Architecture.
 - (iv) Religion and Philosophy.
2. The non-literary sources of either Greek or Roman History.
3. Ancient Historiography.

Section D.—Classical Archaeology

- 1. Architecture, including the chief buildings of Athens and Rome.
- 2. Sculpture and Sculptors.
- 3. Painting, including vases ; coins ; gems.
- 4. (a) Religion, including cults and myths ; (b) daily life, including customs and dress.
- 5. Epigraphy.

Papers 1–4 will contain passages from ancient authors for translation and comment.

In papers 3 and 4 a candidate may devote all or most of his attention to one of the subjects included.

In the oral examination, the candidate will be required to identify, decipher and comment upon works of art, inscriptions, and other antiquities.

Section E.—Comparative Philology of Latin and Greek

There will be no choice of papers in this section. The syllabus will cover the following field :—

General principles of Comparative Philology ; Phonology ; Morphology ; Comparative and Historical Syntax.

Section F.—Special Syllabuses

If a candidate's proposed field of study is not adequately covered by one of the sections A to E, he may at the time of registration submit an alternative scheme (e.g., work on papyrology) or some modification or combination of the foregoing syllabuses, for approval by the University.

Education

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously, and, in addition, have passed the examination for the Diploma in Education of this University unless in any special case the University grants exemption from the general rule.

A candidate may submit in support of his candidature any printed contribution, or contributions, to the advancement of the knowledge of his subject which he may have published in his own name either independently or conjointly. Conjoint work must be accompanied by a statement showing clearly the candidate's own share in the work and countersigned by his collaborator.

The examination will consist of :—

(a) A thesis on a subject to be approved by the University at the time of registration.

(b) An oral examination which shall be mainly related to the subject of the thesis.

(c) Two written papers on a subject cognate to that of the thesis and prescribed by the University.

The thesis must be a record of original work in some branch of education.

Each candidate in submitting the subject of his thesis must furnish a statement of his antecedent course of study or academic record as well as of his previous professional career.

(Note.—Candidates who entered previously under the old regulations and were referred in the thesis only will be permitted to re-present the thesis up to and including 1955.)

Geography

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Candidates for the M.A. in Geography who have not previously obtained B.A. Honours or B.Sc. Special in Geography, or Honours at B.Sc. General (including Geography), or been placed in the First or Second Division at B.A. General (including Geography) of this University, or obtained in another University an equivalent Degree including Geography and specially approved for this purpose, will be required to pass a qualifying examination consisting of four papers (to be selected by the University in relation to the branch of study to be offered at M.A.) of B.A. Honours in Geography and to reach at least Second Class Honours standard.

The examination shall be **either** (i) with thesis, **or** (ii) without thesis.

(i) The **examination with thesis** will consist of :—

(a) The thesis.

(b) A written examination consisting of one or more papers on a subject cognate to that of the thesis, as prescribed by the University at the time of registration.

(c) An oral examination, especially on the subject of the thesis.

The examiners may, however, reject a candidate without holding an oral examination.

Each candidate must, when applying for registration, submit the proposed subject of his thesis for the approval of the University.

The thesis must be a record of original work or other contribution to knowledge in some branch of Geography. Conjoint work may be submitted, provided that the candidate shall furnish a statement countersigned by his collaborator, showing clearly his share in the work.

(ii) The **examination without thesis** shall be on some major aspect of Geography, or on the Regional Geography of an area of continental or sub-continental extent.

Each candidate must, when applying for registration, submit for approval (a) the major subject in which he wishes to present himself for examination, and (b) the section thereof on which he proposes to submit a dissertation, stating the proposed scope and method of treatment.

The examination will consist of :—

- (a) The dissertation.
- (b) Two written papers on the approved subject.
- (c) An oral examination. The examiners may, however, reject a candidate without holding an oral examination.

The dissertation must be an ordered and critical exposition of existing knowledge of some part of the approved subject.

A candidate who enters with thesis or without thesis may submit in support of his candidature any printed contribution or contributions to the advancement of knowledge of his subject which he may have published independently or conjointly. Conjoint work must be accompanied by a statement, countersigned by his collaborator, showing clearly the candidate's own share in the work.

History

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

All candidates entering for the M.A. Degree Examination in History must have previously obtained either a First or Second Class Honours degree in History at this or some other University in the United Kingdom, or a Degree from a University elsewhere which may be adjudged an equivalent qualification in History. Candidates to whom the University grants exemption from this rule will be required, before proceeding to the M.A. Examination, to take not more than six papers of the B.A. Examination, to be specified in each case by the University, and to reach at least Second Class standard therein.

All candidates, when applying for registration, must submit for approval a statement of their previous qualifications and, in the case of candidates proceeding to the examination with thesis, of their proposed field of research.

The examination shall be **either** (i) with thesis, **or** (ii) without thesis.

(i) Examination with thesis

1. A thesis on a subject to be approved by the University. The title of the thesis must be submitted for approval not later than 1 October in the year preceding the examination.

2. An oral examination which will include a test of the candidate's knowledge of the general background of his thesis.

(ii) Examination without thesis

The written examination shall be in **either** (a) English History **or** (b) Ancient History, as follows :—

(Candidates must state when registering, which option and which periods under paper 3 they select.)

(a) English History :—

Candidates taking the written examination shall be examined in :—

- 1. Palaeography, with practical tests [one paper].
- 2. Diplomatic [one paper].
- 3. Sources of English History [one paper] ; viz. **one** of the following sections :—

- (i) To the middle of the 15th century.

(ii) From 1450–1714.

(iii) From 1714 to the present time.

Candidates will be expected to make themselves familiar with some of the more important original authorities of the period which they select.

4. Translation from **two** of the following languages : French, German and Italian [one paper].

Candidates are permitted to bring dictionaries for use during this part of the examination.

5. An oral examination at the discretion of the examiners.

(b) *Ancient History* :—

Candidates taking the written examination shall be examined in :—

1. Palaeography, Greek **or** Latin, with practical tests [one paper].

2. Epigraphy, Greek **or** Latin [one paper].

3. Sources of Ancient History [one paper] ; viz. **one** of the following sections :—

(i) Greek History 490–323 B.C.

(ii) Roman History 133 B.C.–A.D. 117.

Candidates will be expected to make themselves familiar with some of the more important original authorities of the period which they select.

4. Translation from **two** of the following languages : French, German and Italian [one paper].

Candidates are permitted to bring dictionaries for use during this part of the examination.

5. An oral examination at the discretion of the examiners.

Mathematics

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously. Candidates other than those who have obtained the B.A. Honours or B.Sc. Special Degree in Mathematics of this University with First or Second Class Honours will be required, unless specially exempted, to pass a special qualifying examination. In determining the nature of this qualifying examination regard will be paid to the candidate's academic record and to the subjects which he proposes to offer for the M.A. Degree ; but it will normally consist of the whole or selected papers of the B.A. Honours Examination in Mathematics.

The examination will consist of *either* (a) a dissertation with an oral examination, *or* (b) four written papers, two on each of two subjects selected by the candidate from the list given below ; and, at the discretion of the examiners, an oral examination. Each of the written papers will in the main be confined to one of the two selected subjects, but the examiners will not be debarred from setting questions on another subject which bears on the subject of the paper ; one paper at least shall be common to all candidates offering the same subject. Each candidate, when registering, shall submit the titles of his subjects, together with a statement of the proposed method of treatment, for the approval of the University. Candidates are not precluded from submitting for approval subjects other than those set out in the printed list. The dissertation must be an ordered and critical exposition of some part of the approved subject.

1. Theory of Numbers.
2. Theory of Functions of a Real Variable.
3. Theory of Functions of a Complex Variable.
4. Multiple Periodic Functions.
5. Algebraic Functions and their Integrals.
6. Differential Equations.
7. Calculus of Variations.
8. Theory of Groups.
9. Abstract Algebra.
10. Statistical Mathematics.
11. Finite Differences.
12. Algebraic Geometry.
13. Projective Geometry.
14. Differential Geometry.
15. Topology.
16. Algebraic Invariant Theory.
17. Dynamics.
18. Hydrodynamics.
19. Thermodynamics.
20. Dynamical Theory of Gases.
21. Quantum Theory.
22. Statistical Mechanics.
23. Theory of Elasticity.
24. General Theory of the Electromagnetic Field.
25. Relativity.
26. Mathematical Astronomy (to count as one subject or as two subjects).
27. Physical and Dynamical Meteorology.

Mediaeval and Modern Languages

The following are the subjects, any one of which may be offered for the M.A. in Mediaeval and Modern Languages :—

Celtic Language and Literature.

Dutch Language and Literature.

English Language and Literature.

French Language and Literature.

German Language and Literature.

Italian Language and Literature.

Portuguese Language and Literature.

Spanish Language and Literature.

Celtic

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

All candidates, before proceeding to the M.A. Examination in Celtic, will be required to have passed the B.A. Honours Examination in Celtic, unless in any special case the University grants exemption from the general rule.

Candidates not exempted and presenting themselves for papers of the B.A. Honours Examination as a qualifying examination for the M.A. are not required to take a subsidiary subject.

The examination will consist of :—

One of the following sections (A) or (B) :—

(Candidates must state, when registering, which section they select.)

A.—Irish Language, and Old and Middle Irish Literature to the close of the sixteenth century.

The relations of Irish (1) to Welsh, (2) to Scottish Gaelic and Manx, (3) to the other Aryan Languages.

Instead of Old and Middle Irish Literature, candidates may offer Modern Irish Literature together with the Literature of the Scottish Gaelic and Manx Languages.

B.—Welsh Language and Old and Middle Welsh Literature to the close of the sixteenth century.

The relations of Welsh (1) to Irish, (2) to Old Cornish and Breton (3) to other Aryan Languages.

Instead of Old and Middle Welsh Literature, candidates may offer Modern Welsh Literature together with the Literature of the Cornish and Breton Languages.

Four papers will be set in each section. All candidates will take an oral examination.

Dutch

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Candidates, other than those who have obtained a First or Second Class Honours Degree in Dutch Language and Literature at this or some other British University, or a Degree from a University elsewhere which may be judged an equivalent qualification, will be required, unless special exemption be granted, to pass a qualifying examination before proceeding to the M.A. Examination. The qualifying examination will normally consist of the whole or selected papers of the B.A. Honours Examination in Dutch, excluding the subsidiary subject.

The examination shall be **either** (i) with thesis **or, in 1954 and 1955 only** (ii) without thesis.

(Candidates must state, when registering, which section and options they select.)

(i) Examination with thesis.

The examination shall include (1) a thesis on a subject to be approved by the University at the time of registration ; (2) a written examination ; (3) an oral examination which will not be restricted to the subject of the thesis.

The written examination shall consist of two papers containing questions on two sections from the following Groups. Candidates will be required to choose **one** section from each group.

(1) (a) Old Saxon and the published material in Old Low Franconian (West and East), (b) Old English, (c) Old High German, (d) Middle Dutch. A study of the historical and social background as well as of literary and linguistic problems will be required. There will be no set books, but candidates offering Middle Dutch will be required to make a special study of **one** of the following branches of the subject : (i) The Beast Epic ; (ii) The Heroic Epic ; (iii) The Romances ; (iv) Mystical Poetry and Prose ; (v) Didactic Literature ; (vi) The Drama.

(2) **One** of the following periods of Modern Dutch literature :—

(i) 1500-1600 ; (ii) 1600-1670 ; (iii) 1670-1770 ; (iv) 1770-1830 ; (v) 1830-1880 ; (vi) 1880-1939. A study of the historical and social background as well as of literary and linguistic problems will be required. There will be no set books.

(ii) **Examination without thesis (in 1954 and 1955 only).**

The examination without thesis shall consist of three parts—one (A) compulsory, and two (B) and (C) which shall allow of choice. Candidates must choose five sections from (B) and (C), not less than two from each. There will be no set books.

There will be an oral examination for all candidates.

(A) (Two papers)

1. Prose Composition and Unseen Translation.
2. An Essay in Dutch.

(B) (Two or three papers)

1. Old Saxon and the published materials in Old Low Franconian (West and East). ..
2. Old English
3. Old High German
4. Middle Dutch

A study of the historical and social background as well as of literary and linguistic problems will be required. There will be no set books, but candidates offering Middle Dutch will be required to make a special study of one of the following branches of the subject : (i) The Beast Epic ; (ii) The Heroic Epic ; (iii) The Romances ; (iv) Mystical Poetry and Prose ; (v) Didactic Literature ; (vi) The Drama.

(C) (Two or three papers)

One of the following periods of Modern Dutch literature :—

- 1500-1600
 1600-1670
 1670-1770
 1770-1830
 1830-1880
 1880-1939

A study of the historical and social background as well as of literary and linguistic problems will be required. There will be no set books.

English

The examination shall be **either** (i) with thesis **or** (ii) without thesis **(in 1954 and 1955 only)**.

(i) **Examination with thesis**

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Candidates for the M.A. Degree in English with thesis who have not obtained First or Second Class Honours at the B.A. Examination in English of this University, or an appropriate qualification of another approved University, will be required to take some or all of the papers of the B.A. Honours Examination in English as a qualifying examination, and to reach at least Second Class Honours standard. Candidates who have been placed in the First or Second Division at the B.A. General Examination (including English) may in exceptional circumstances be granted exemption from the qualifying examination, but each application will be considered individually on the evidence submitted and in relation to the project of research proposed.

All candidates who apply for registration in virtue of a qualification of another University will be required to produce evidence of **either** (a) an adequate knowledge of Old and Middle English, **or** (b) an adequate linguistic training in some classical language, e.g. Greek, Latin, Sanskrit, Classical Chinese, Arabic or Persian.

Candidates will be required (a) to present a thesis, (b) to take one written paper, and (c) to pass an oral examination.

(a) *The Thesis* must be a record of original work or an ordered and critical exposition of existing data with regard to a particular subject. Each candidate must, when applying for registration, submit the proposed subject of his thesis for the approval of the University.

(b) *The Written Examination* shall consist of **one** of the following papers :—

- (i) Unspecified Old English texts : translation and commentary.
- (ii) Unspecified Middle English texts : translation and commentary.
- (iii) Principles of English Philology.
- (iv) Old Icelandic, with specified texts.
- (v) Palaeography and Bibliography.
- (vi) Literary Forms and Varieties of Style.
The various literary “kinds,” and the style of writing characteristic of different “kinds” and of different periods.
- (vii) Literature, Life and Thought of the period relevant to the thesis.

The candidate's choice of paper should normally be relevant to the subject of his thesis, **and must be submitted for approval at the time of registration.** The relevant period is defined as one of the following :—The Anglo-Saxon period ; 1100–1400 ; any one of the centuries 15th to 20th.

(c) *The Oral Examination* shall relate to all or any of the following:

- (i) the subject of the thesis, (ii) the subject-matter of the written paper, (iii) any special aspect of English studies which may in the discretion of the examiners be considered essential for the adequate study of the field offered by the candidate.

(ii) **Examination without thesis**

The examination **without** thesis will not be held after May 1955.

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Candidates for the M.A. Degree in English by written papers who have not obtained the B.A. Honours Degree in English of this University, or an appropriate qualification of another approved University, will be required to take some or all of the papers of the B.A. Honours Examination in English as a qualifying examination. Candidates who have been placed in the First or Second Division at the B.A. General Examination (including English) may apply for exemption from the qualifying examination in whole or in part.

The examination will be divided into two sections, of which candidates must offer **one, and must state, when registering, which section and which options they select.** In both sections there will be seven papers. In addition there will be an oral examination.

Section (A)

1. **Either** History of the Language from 1400, with commentary on unspecified Literary texts,

or Unspecified Old and Middle English Texts : translation and commentary.

2, 3, 4. A period of literature chosen from the following :—Origins to 1100 ; 1100 to 1400 ; any century thereafter. Three papers : (a) History of Literature ; (b) The life and thought of the period ; (c) A special author of the period, selected by the candidate and approved by the University.

5. **Either** A period of another European literature, selected by the candidate and approved by the University, to be studied from the original texts in relation to the candidate's choice of period under 2, 3 and 4 ;

or The History of Criticism in Europe in relation to the period selected under 2, 3 and 4.

6. One kind of English literature chosen from the following :—Epic and Romance ; Drama ; Lyric ; Novel ; History and Biography ; the Sermon.

7. A special subject chosen from the following :—History of Shakespearean Scholarship ; History of English Prosody ; Palaeography ; Bibliography ; History of the Stage in Europe ; History of Philosophy in England ; History of Religious Thought in England ; American Literature ; Literary and Colloquial English of the Twentieth Century ; Mediaeval Latin, **or** Renaissance Latin, with set texts ; Old French, with set texts ; Mediaeval and Renaissance Italian, with set texts.

Section (B)

1. **Either** History of English Literature before 1660,
or History of English Literature after 1660.

2, 3. English Philology [two papers] :—(a) History of the Language to 1400 ; (b) History of the Language from 1400 to the present day, with commentary upon unspecified texts.

4. Unspecified Old English texts (including dialects) : translation and commentary.

5. Unspecified Middle English texts (including dialects) : translation and commentary.

6. Old Icelandic Literature, with set texts.

7. A special subject chosen from the following :—History of Anglo-Saxon Scholarship ; Gothic and Germanic Philology ; Anglo-Saxon Archaeology (including Epigraphy) ; the Philology of Names ; History and Methods of Lexicography ; Modern Dialects of the English Language ; Literary and Colloquial English of the Twentieth Century ; Old Saxon and Old High German, with set texts ; Mediaeval Latin **or** Renaissance Latin, with set texts ; Old French and Anglo-Norman, with set texts.

French

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

All candidates, before proceeding to the M.A. Examination in French, will be required to have passed the B.A. Honours Examination in French, unless in any special case the University grants exemption from the general rule.

Candidates not exempted and presenting themselves for papers of the B.A. Honours Examination as a qualifying examination for the M.A. are not required to take a subsidiary subject.

The examination shall be **either** (i) with thesis **or** (ii) without thesis.

(i) Examination with thesis

Candidates will be required :—

(a) To present a thesis on a subject to be approved by the University at the time of registration.

(b) To pass a written examination consisting of two papers :—
 (i) An essay in French bearing on the period or akin to the theme of the candidate's thesis. (ii) Translation (with commentary) : three passages of French to be set—(i) Old French ; (ii) Renaissance French ; (iii) Modern French.

(c) To pass an oral examination which will not be restricted to the subject of the thesis.

The examination shall consist of three sections—one (A) compulsory, and two (B) and (C) alternative with each other.

(Candidates must state, when registering, which section, Special Subject and other options they select.)

Section (A) will consist of four papers. Section (B) will consist of two compulsory papers and four other papers of which candidates must offer any *three*. Section (C) will consist of a special subject paper (compulsory) and five other papers of which candidates must offer any *four*.

All candidates will take an oral examination.

In all parts of this examination candidates will be required to reach as high a standard of attainment as B.A. Honours graduates may be expected to reach after not less than two years of post-graduate studies.

(A) [*Compulsory*]

1. Essay in French.
2. Translation into French.
3. Translation from Modern French.
4. Commentary in French on an unseen passage, taken from a contemporary author.

(B) [*Mediaeval : alternative with (C)*].

1. A Special Subject (For list of subjects, see Appendix, p. A87).
2. Translation from Mediaeval and Renaissance unseen texts, with **either** linguistic **or** literary commentary.

Any *three* of the following :—

3. Mediaeval Literature.
4. Renaissance Literature.
5. Romance Philology.

Candidates should have an acquaintance with the whole field, but particularly with the evolution and characteristics of Provençal, Spanish and Italian. They will have an opportunity of showing a knowledge of all three of these languages.

6. A period of literature, Provençal (from the earliest texts down to 1250), **or** Spanish (14th **or** 15th centuries), **or** Italian (Petrarch and Boccaccio).

(C) [*Modern : alternative with (B)*]

1. A Special Subject (For list of subjects, see Appendix, p. A87).
- Any *four* of the following :—
2. Literature from 1610 to 1715.
 3. Literature from 1715 to 1789.
 4. Literature from 1789 to 1870.
 5. Literature from 1870 to the present day.
 6. A period of literature, English (1780-1830), **or** German (1760-1832), **or** Italian (Court Literature of the Renaissance), **or** Spanish (1550-1650), studied from the point of view of its influence on French literature.

German

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Candidates, other than those who have obtained a First or Second Class Honours Degree in German Language and Literature at this or some other British University, or a Degree from a University elsewhere which may be judged an equivalent qualification, will be required, unless special exemption be granted, to pass a qualifying examination before proceeding to the M.A. Examination. The qualifying examination will normally consist of the whole or selected papers of the B.A. Honours examination in German Language and Literature, excluding the subsidiary subject.

The examination shall be **either** (i) with thesis **or, in 1954 and 1955 only** (ii) without thesis.

(i) Examination with thesis

The examination shall include (1) a thesis on a subject to be approved by the University at the time of registration, (2) a written examination, (3) an oral examination which will not be restricted to the subject of the thesis.

The written examination shall consist of two papers containing questions on two sections from the following groups. Candidates will be required to choose one section from each group, and **must state, when registering, which sections and options they select.**

1. (a) Gothic, (b) Old Norse, (c) Old Saxon, (d) Old High German, (e) Middle High German. A study of the historical and social background as well as of literary and linguistic problems will be required. There will be no set books, but candidates offering Middle High German will be required to make a special study of **one** of the following branches of the subject : (a) The Heroic Epic ; (b) The Court Epic ; (c) Lyrical Poetry ; (d) Didactic Poetry.

(For further details see **Notes** below.)

2. (a) The Sixteenth Century, (b) The Seventeenth Century, (c) The Eighteenth Century, (d) The Nineteenth Century, (e) The Twentieth Century. A study of the historical and social background as well as of the literary and linguistic problems of each period will be required. There will be no set books. **Answers in this group must be written in German.**

(ii) Examination without thesis (in 1954 and 1955 only).

The examination without thesis shall consist of three parts—one (A) compulsory, and two (B) and (C) which shall allow of choice. Candidates must choose five sections from (B) and (C), not less than two from each. **Candidates must state, when registering, which sections and options they select.** There will be no set books.

All candidates will take an oral examination.

(A) [Two papers].

1. Prose Composition and Unseen Translation.
2. Essay.

(B) [Two or three papers].

1. Gothic	{ A study of the historical and social background as well as of the literary and linguistic problems of each language will be required. There will be no set books, but candidates offering Middle High German will be required to make a special study of one of the following branches of the subject : (a) The Heroic Epic ; (b) The Court Epic ; (c) Lyrical Poetry ; (d) Didactic Poetry.
2. Old Norse	
3. Old Saxon	
4. Old High German ..	
5. Middle High German	

(For further details see **Notes** below.)

(C) [Two or three papers].

1. The Sixteenth Century	{ A study of the historical and social background as well as of the literary and linguistic problems of each period will be required. There will be no set books.
2. The Seventeenth Century ..	
3. The Eighteenth Century ..	
4. The Nineteenth Century ..	
5. The Twentieth Century ..	

Notes

(a) **Gothic.**—Candidates are expected to have read all the extant Gothic literature. They should be acquainted with the provenance of the Gothic alphabet, and an adequate knowledge of Greek is assumed. Some knowledge of the history of the Goths, with special reference to the life and times of Ulfilas, will be expected, and should be based on a study of the sources, either directly or in translation.

(b) **Old Norse.**—By Old Norse is understood the period from the earliest remains of the Norse language up to the Reformation, with the main emphasis on the Viking period. Candidates should have studied a representative selection of lays from the Poetic Edda and at least two of the longer classical Icelandic sagas. Skaldic poems will not be set for translation ; but some acquaintance with Skaldic style will be expected. Apart from the History of Old Norse Literature candidates should study Norse mythology, the Norse attitude to life, and the general historical background, with special reference to the chronology and geographical extent of the Viking expeditions.

(c) **Old Saxon.**—Candidates should have read the whole of the Heliand, together with the Genesis fragments and the minor Old Saxon texts. Apart from the history of the literature some knowledge of the historical background and cultural centres and of relations with England will be expected. Candidates should have some knowledge of Old English biblical poetry as a background to Old Saxon.

(d) **Old High German.**—By Old High German is understood the period from the earliest remains of the High German language up to about the year 1050. Candidates should read the texts contained in W. Braune : *Althochdeutsches Lesebuch*, supplementing these by the additional texts contained in E. Steinmeyer : *Kleinere Althochdeutsche Sprachdenkmäler*. They should consult Sievers' edition of Tatian, one of the Otfrid editions, the Isidor edition by Hench, and Sehart's edition of Notker's Boethius translation. Apart from the history of Old High German literature candidates should acquaint themselves with the

organization of the Carolingian Empire, the General history of Germany during the period of Saxon emperors, and the cultural influence of the Church.

Candidates offering any of the above sections (a)–(d) should submit, at the time of entering for the examination, a list of texts studied.

Italian

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

All candidates, before proceeding to the M.A. Examination in Italian, will be required to have passed the B.A. Honours Examination in Italian, unless in any special case the University grants exemption from the general rule.

Candidates not exempted and presenting themselves for papers of the B.A. Honours Examination as a qualifying examination for the M.A. are not required to take a subsidiary subject.

The examination shall be **either** (i) with thesis **or** (ii) without thesis.

(i) Examination with thesis

Candidates will be required :—

(a) To present a thesis on a subject to be approved by the University at the time of registration.

(b) To pass a written examination consisting of two papers :—

1. General questions to be treated in the manner of an essay on **either** (a) a special period of literature which has some relation to the thesis offered, **or** (b) a special period of literature selected from the following :—

(i) Early literature to the death of Dante.

(ii) Renaissance literature, 1450 to 1575.

(iii) Modern literature, 1750 to the present day.

(Candidates must state, when registering, which option they select.)

2. Translation, chiefly from Early Italian, with commentary.

(c) To pass an oral examination which will not be restricted to the subject of the thesis.

(ii) Examination without thesis

The examination shall consist of three sections, one (A) compulsory, and two (B) and (C) alternative with each other.

(Candidates must state, when registering, which section and options they select.)

Five papers shall be set under section (A), five under (B), and five under (C).

All candidates will take an oral examination.

(A) [Compulsory].

1. General Italian literature from 1500 to the present day.

2. (a) Set texts up to 1600, with questions on language, metre and literary history, arising out of them.

(b) Philology in relation to the Italian language.

3. Set texts from 1600 to the present day, with questions on language metre and literary history, arising out of them.

4. Translation from and into Italian.

5. Essay in Italian.

(B) [*Alternative with (C)*].

1 and 2. Set and unprescribed Old Italian texts to 1600, with questions arising out of them.

3 and 4. Set texts in (a) French, and (b) **either** Spanish **or** Provençal, with questions arising out of them.

5. Romance Philology.

(C) [*Alternative with (B)*].

1 and 2. Italian Literature.

3 and 4. Special study of a set author or period of literature chosen by the candidate from a number to be prescribed.

5. French, **or** English, **or** Provençal Literature studied in its relation to Italian Literature.

Portuguese

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

All candidates, before proceeding to the M.A. Examination in Portuguese, will be required to have passed the B.A. Honours Examination in Portuguese, unless in any special case the University grants exemption from the general rule.

Candidates not exempted and presenting themselves for papers of the B.A. Honours Examination as a qualifying examination for the M.A. are not required to take a subsidiary subject.

The examination shall be **either** (i) with thesis **or** (ii) without thesis.

(i) **Examination with thesis**

Candidates will be required :—

(a) To present a thesis on a subject to be approved by the University at the time of registration.

(b) To pass a written examination consisting of two papers :—

1. General questions to be treated in the manner of an essay, Candidates will not be required to write on more than one theme, and are advised not to attempt more than three.

2. Translation, chiefly from Mediaeval Languages, with commentary.

(c) To pass an oral examination which will not be restricted to the subject of the thesis.

(ii) **Examination without thesis**

The examination shall consist of three sections, one (A) compulsory, and two (B) and (C) alternative with each other. (**Candidates must state, when registering, which section and options they select.**) Six papers of three hours each will be set.

All candidates will take an oral examination.

(A) [*Compulsory*].

1. General Portuguese literature from 1500 to the present day.

2. (a) Set texts up to 1600 with questions on language, metre and literary history, arising out of them.

(b) Philology in relation to the Portuguese language.

3. Set texts from 1600 to the present day, with questions on languages, metre and literary history, arising out of them.
4. Translation from and into Portuguese.
5. Essay in Portuguese.

(Three papers will be set, one on sections (1) and (3), one on section (2) and one on sections (4) and (5).)

(B) [*Alternative with (C)*].

1 and 2. Set and unprescribed Old Portuguese texts to 1600 with questions arising out of them.

3 and 4. Set texts in Spanish with questions arising out of them.

5. Romance Philology.

(Three papers will be set, one on sections (1) and (2), one on sections (3) and (4) and one on section (5).)

(C) [*Alternative with (B)*].

1 and 2. Portuguese literature.

3 and 4. Special study of a set period of literature chosen by the candidate.

5. Spanish or Brazilian literature studied in its relation to Portuguese literature.

(Three papers will be set, one on sections (1) and (2), one on sections (3) and (4) and one on section (5).)

Spanish

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

All candidates, before proceeding to the M.A. Examination in Spanish, will be required to have passed the B.A. Honours Examination in Spanish, unless in any special case the University grants exemption from the general rule.

Candidates not exempted and presenting themselves for papers of the B.A. Honours Examination as a qualifying examination for the M.A. are not required to take a subsidiary subject.

The examination shall be **either** (i) with thesis **or** (ii) without thesis.

(i) Examination with thesis

Candidates will be required :—

(a) To present a thesis on a subject to be approved by the University at the time of registration.

(b) To pass a written examination consisting of two papers :—

1. General questions to be treated in the manner of an essay on **either** (a) a special period of literature which has some relation to the thesis offered, **or** (b) a special period of literature selected from the following. (**Candidates must state, when registering, which option they select.**)

(i) Early literature to *La Celestina*.

(ii) The literature of the sixteenth and seventeenth centuries.

(iii) Modern literature to the present day.

2. Translation, chiefly from Early Spanish, with commentary.

(c) To pass an oral examination which will not be restricted to the subject of the thesis.

(ii) **Examination without thesis**

The examination shall consist of three sections, one (A) compulsory, and two (B) and (C) alternative with each other.

Five papers will be set under section (A), five under (B), and five under (C).

All candidates will take an oral examination.

(Candidates must state, when registering, which section and options they select.)

(A) [*Compulsory*].

1. General Spanish literature from 1500 to the present day.
2. (a) Set texts up to 1600, with questions on language, metre and literary history, arising out of them.
(b) Philology in relation to the Spanish language.
3. Set texts from 1600 to the present day, with questions on language, metre and literary history, arising out of them.
4. Translation from and into Spanish.
5. Essay in Spanish.

(B) [*Alternative with (C)*].

1 and 2. Set and unprescribed Old Spanish texts to 1600, with questions arising out of the passages set.

3 and 4. Set texts in (a) Portuguese and (b) French **or** Italian **or** Catalan, with questions arising out of them.

5. Romance Philology.

(C) [*Alternative with (B)*].

1 and 2. Spanish Literature.

3 and 4. Special study of a set author or period of literature, chosen by the candidate.

5. Portuguese **or** French **or** Italian **or** Catalan literature studied in its relation to Spanish Literature.

Oriental Languages

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

All candidates entering for the M.A. Degree in an Oriental language must previously have obtained either a First or Second Class Honours Degree in a relevant Oriental language at this or some other University in the United Kingdom, or a Degree from a University elsewhere which may be judged an equivalent qualification in the Oriental language in question. Candidates to whom the University grants exemption from this rule will be required, before proceeding to the M.A. examination, to pass a qualifying examination to be prescribed by the University in each case. This examination may consist of the whole or part of the relevant B.A. Honours Examination, or of special papers of an equivalent standard.

Any **one** of the following branches may be taken :—

1. Arabic (Classical).
2. Chinese (Classical).
3. Hebrew and Aramaic.

4. Indo-Aryan.
5. Japanese (Classical).
6. Persian (Classical).
7. Turkish.

In each subject the candidate may choose examination **either** (i) with thesis **or** (ii) without thesis.

(i) Examination with thesis

The examination will consist of :—

1. A thesis on a subject to be approved by the University at the time of registration.
2. Two written papers on a subject cognate to that of the thesis, as prescribed by the University at the time of registration. The papers may include translation from unspecified texts.
3. An oral examination.

(ii) Examination without thesis

The special regulations in the several subjects are as follows :—

1. Arabic (Classical)

There will be seven papers.

1-2. Translation from set texts with questions on their language and subject-matter.

3. Translation from unspecified texts.

4. Translation into Arabic.

5. The history, literature, and institutions of the Arabs.

6-7. Special subject : two papers on **one** of the following subjects with set texts :—

- (1) Literature : Poetry to the end of the Ummayyad period.
- (2) Literature : Abbasid poetry.
- (3) Literature : Prose to A.D. 500.
- (4) Literature : Arabic literature in Spain.
- (5) Literature : Modern Arabic.
- (6) Koranic exegesis.
- (7) Muslim theology.
- (8) Arabic grammarians.
- (9) South Arabian Inscriptions.

(Candidates must state, when registering, which subject they select.)

(Candidates will be required to show a general acquaintance with the principal Arab and European works on the subject selected and a detailed knowledge of the set books.)

2. Chinese (Classical)

There will be seven papers, the five papers in any **one** of the sections A-E below together with the first two papers of any other section. **(Candidates must state, when registering, which sections and options they select.)**

Instead of Paper 2 in any section candidates may choose a paper in **Japanese or Tibetan or Manchu or Mongolian or Pali or Sanskrit**, which will consist of translation from unspecified texts with questions on their language.

A Classics

- 1-2. Translation from specified texts with questions on their language, literary form and subject-matter.
3. Translation from unspecified texts.
4. Chinese classical literature.
5. **Either** (a) Confucian institutions, **or** (b) The history of the Chou dynasty.

B Buddhism

- 1-2. Translation from specified texts with questions on their language, literary form and subject-matter.
3. Translation from unspecified texts.
4. Chinese Buddhist literature.
5. The history of Chinese Buddhism.

C History

- 1-2. Translation from specified texts with questions on their language, literary form and subject-matter.
3. Translation from unspecified texts.
4. The sources relating to the period selected under 5 below.
5. The history of **either** (a) the Former Han dynasty, **or** (b) the T'ang dynasty.

D Poetry

- 1-2. Translation from specified texts with questions on their language, literary form and subject-matter.
3. Translation from unspecified texts.
4. Chinese poetical forms.
5. The history of Chinese poetry.

E Prose Literature

- 1-2. Translation from specified texts with questions on their language, literary form and subject-matter.
3. Translation from unspecified texts.
4. Chinese prose styles.
5. The history of Chinese prose literature.

3. Hebrew and Aramaic

There will be seven papers in any **one** of the sections A-E below. **(Candidates must state, when registering, which section they select.)**

A Biblical Hebrew and Aramaic

- 1-2. Translation from (a) prose, (b) poetical parts of the Old Testament, and (c) Prophets ; questions on their language and subject-matter. Candidates will be expected to translate an ordinary passage of the Jewish commentators and portions of the Greek and Aramaic versions bearing upon a given Old Testament text.
3. Grammar. Translation into Hebrew.
4. History of the Hebrew people to A.D. 70.
5. The history of the religion of the Hebrew people to A.D. 70.
6. The history of the Hebrew text of the Canon and of the Greek and Aramaic versions.
7. Introduction to the books of the Old Testament.

B *Talmudic and Mediaeval Hebrew Literature and Languages*

1-2. Translation from specified and unspecified texts of the Mishna and Gemara, with questions on their language and subject-matter.

3. Translation from and interpretation of the Rabbinic commentaries on the Old Testament, "commentaries" to be understood in the narrower sense.

4. Translation from and commentary on Tannaitic and Amoraic Midrashim.

5. Liturgy and poetry (to include only the Spanish Hebrew poets) with questions on metre.

6. Translation from and commentary on the works of set Jewish mediaeval philosophical authors.

7. The history of Jewish literature to A.D. 1600.

The following books are recommended for study :—

W. Bacher : *Agada der Tannaiten*, I, II ; *Agada der palaestinischen Amoräer*, I, II, III ; *Agada der babylonischen Amoräer* ; *Anfänge der hebräischen Grammatik* (from ZDMG, Vol. 49) ; *Die Massora* (from Winter und Wünsche, see below).

J. Winter und A. Wünsche : *Die jüdische Literatur seit Abschluss des Kanons*, I-III (1894).

M. L. Margolis : *Lehrbuch der aramäischen Sprache*.

C. Levias : *A Grammar of the Aramaic idiom*.

M. H. Segal : *A Grammar of Mishnaic Hebrew*.

J. Derenbourg : *Essai sur l'histoire et la géographie de la Palestine*.

E. Schürer : *History of the Jewish People in the Time of Jesus Christ*.

M. Mielziner : *Introduction to the Talmud*.

S. Krauss : *Archaeologie des Talmuds*, I-III (Berlin).

H. Strack : *Introduction to the Talmud and Midrash* (Jewish Publication Society, Philadelphia).

L. Zunz : *Die Gottesdienstlichen Vorträge der Juden ; Literaturgeschichte der synagogalen Poesie*.

M. Waxman : *A History of Jewish Literature* (Bloch, New York).

C *Early Aramaic Language and History*

1. Translation of Aramaic inscriptions transliterated into Hebrew characters.

2. Transcription into Hebrew characters and translation of Aramaic texts.

3. Comparative grammar of Semitic languages with special reference to North Semitic inscriptions.

4. History of alphabetic writing in the ancient Near East.

5. History of the Aramean peoples from 1500 B.C. to 300 B.C. A knowledge of sources is required.

6. Religion of Syria down to the beginning of the Roman period. A knowledge of sources is required.

7. Antiquities and art of the period 1000-300 B.C.

The following books are recommended for study :—

G. A. Cooke : *Text-book of North Semitic Inscriptions*.

M. Lidzbarski : *Handbuch der nordsemitischen Epigraphik* (with Atlas) (Weimar, 1898).

A. E. Cowley : *Aramaic Papyri of the 5th Century B.C.*

Rosenthal : *Die aramäische Forschung seit Nöldekes Veröffentlichungen*.

C. Brockelmann : *Vergleichende Grammatik der semitischen Sprachen* (Berlin, 1908-13).

D. Diringer : *Le Iscrizioni antico-ebraiche palestinesi* (Florence, 1934).

The relevant passages in Diringer : *The Alphabet*, and in G. R. Driver : *Semitic Writing*.

A. T. E. Olmstead : *History of Palestine and Syria to the Macedonian Conquest* (Scribner, New York).

L. J. Delaporte : *Les Peuples de l'Orient Méditerranéen. I, Le Proche Orient Asiatique* (Presses Universitaires, Paris, 1938).

Cambridge Ancient History, Vol. I-II.

D Syriac Language, Literature and History

1-2. Translation from specified texts with questions on their language and subject-matter.

3. Translation from unspecified texts.

4. Comparative Grammar of the Semitic Languages, with special references to Arabic, Hebrew and Syriac.

5. History of the Aramaic Language, including a knowledge of the Syriac grammarians to the death of Bar Hebraeus.

6. History of Aramaic and Syriac Literature from the 5th century B.C. to the 13th century A.D.

7. History of Syria from the accession of the Emperor Julian to the fall of the Abbaside Caliphate (knowledge of Syriac sources required).

The following books are recommended for study :—

C. Brockelmann : *Vergleichende Grammatik der semitischen Sprachen* (Berlin, 1908-13).

R. J. H. Gottheil : *A Treatise on Syriac Grammar by Mär Eliä of Sobha* (Berlin/London/New York, 1887).

A. Moberg : *Le Livre des Splendeurs, la Grande Grammaire de Gregoire Barhebraeus* (Lund, 1922).

A. Merx : *Historia artis grammaticae apud Syros* (Leipzig, 1889).

F. Rosenthal : *Die aramaistische Forschung seit Th. Noldekes Veröffentlichungen* (Leiden, 1939).

A. Baumstark : *Geschichte der syrischen Literatur* (Bonn, 1922).

R. Duval : *La littérature syriaque* (3e ed., Paris, 1907).

W. H. P. Hatch : *An Album of Dated Syriac Manuscripts* (Harvard, 1947).

Cambridge Mediaeval History, Vols. I-III (relevant chapters).

E. W. Brooks : *The Sixth Book of the Select Letters of Severus, Patriarch of Antioch* (London, 1902-4), Section II and III.

R. J. H. Gottheil : *A Selection from the Syriac Julian Romance* (Leiden, 1906).

F. C. Burkitt : *Euphemia and the Goth* (Cambridge, 1913).

G. Cardahi : *Liber thesauri de arte poetica Syrorum necnon de eorum poetarum vitis et carminibus* (Rome, 1875).

E Akkadian

1-2. Translation from set and unspecified historical and literary texts.

3-4. Economic and social history (including translation from business documents and letters, and discussion of them).

5. Comparative grammar of the various Semitic dialects written in Cuneiform.

6. History of Akkadian literature.

7. Babylonian religion 900-400 B.C., with special study of the sources.

4. Indo-Aryan

There will be seven papers, the five papers in any **one** of the sections A-G below together with the first two papers of any other section. (**Candidates must state, when registering, which sections and options they select.**)

A *Classical Sanskrit, including the Epics*

1-2. Translation from set texts (including commentaries therewith printed or quoted in the editions cited), with questions on their language and subject-matter.

3. Translation from unspecified texts.

4. Translation into Sanskrit ; questions on grammar.

5. The history of Sanskrit literature and of philosophy and religion in India.

B In 1954, *Pali* ; in and after 1955, *Pali with Buddhist Sanskrit Texts*

1-2. Translation from set texts, with questions on their language and subject-matter.

3. Translation from unspecified texts.

4. Translation into Pali ; questions on grammar.

5. The history of Pali literature and of Buddhism.

Candidates are required to use Roman script in writing Pali.

C *Vedic Sanskrit*

1-2. Translation from set texts, with questions on their language and subject-matter.

3. Translation from unspecified texts.

4-5. Vedic philology, including phonology, morphology, syntax, accentuation, metre and textual criticism.

D *Epigraphy and History*

Candidates will be examined **either** in Sanskrit inscriptions with the history of India **or** (**in 1954 only**) in Pali and Prakrit inscriptions with Early Sinhalese and Indian history ; (**in and after 1955**) in Prakrit inscriptions with Early Sinhalese and Indian History.

1. Translation from set texts, with questions on their language and subject-matter.

2. Translation from unspecified texts.

3-4. History.

5. Palaeography.

E *Prakrit*

1-2. Translation from set texts, with questions on their language and subject-matter.

3. Translation from unspecified texts.

4. The comparative philology of Prakrit.

5. The history of literature and religion as represented in Prakrit.

F Philosophy

- 1-2. Translation from set texts, with questions on their language and subject-matter.
3. Translation from unspecified texts, with questions on their subject-matter.
4. Questions on a special subject, chosen from :—
 - (a) one of the six Darsanas,
 - or (b) Buddhist philosophy,
 - or (c) Jain philosophy.
5. The history and literature of Indian Philosophy.

G Language

1. The general principles of linguistics.
2. The history of the sounds, forms, meanings, and syntax of Sanskrit (including Vedic).
3. The history of the sounds, forms, meanings, and syntax of Pali and Prakrit.
4. The history of the sounds, forms, meanings, and syntax of the modern Indo-Aryan languages with special reference to **one**.
5. Passages for translation from Sanskrit, Pali, Prakrit, and the selected language.

5. Japanese (Classical)

There will be seven papers, the five papers of any **one** of the sections A-E below together with the first two papers of any other section. (**Candidates must state, when registering, which sections and options they select.**)

Instead of Paper 4 in any section the candidate may choose a paper in Chinese, or Tibetan, or Manchu, or Mongolian, or Pali, or Sanskrit, which will consist of translation from unspecified texts with questions on their language.

A Sinto

- 1-2. Translation from specified texts, with questions on their language, literary form and subject-matter.
3. Translation from unspecified texts.
4. The sources relating to the period selected under 5 below.
5. The Sinto of **either** (a) the Nara period, or (b) the Kamakura period.

B History

- 1-2. Translation from specified texts, with questions on their language, literary form and subject-matter.
3. Translation from unspecified texts.
4. The sources relating to the period selected under 5 below.
5. The history of **one** of the following periods :—
 - (a) the Asuka-Nara period,
 - (b) the Kamakura period,
 - (c) the Tokugawa period.

C Poetry

- 1-2. Translation from specified texts, with questions on their language, literary form and subject-matter.

3. Translation from unspecified texts.
4. The sources relating to the period selected under 5 below.
5. The poetry of **either** (a) the Nara period, **or** (b) the Heian period.

D Prose Literature

- 1-2. Translation from specified texts, with questions on their language, literary form and subject-matter.
3. Translation from unspecified texts.
4. The sources relating to the period selected under 5 below.
5. The prose literature of **either** (a) the Nara period, **or** (b) the Heian period, **or** (c) the Kamakura period.

E Language

- 1-2. Translation from specified texts, with questions on their language and subject-matter.
3. Translation from unspecified texts.
4. The sources relating to the period selected under 5 below.
5. The Japanese language of **either** (a) the 8th century, **or** (b) the 16th and 17th centuries.

6. Persian (Classical)

There will be seven papers of three hours each.

- 1-3. Translation from specified texts with questions on their language and subject matter.
4. Translation from unspecified texts.
5. Translation into Persian.

6-7. Special Subjects :— Any **two** of the following, to be chosen by the candidate ; candidates will be required to show a general acquaintance with the principal Persian and European works on the subject selected and a detailed knowledge of the specified texts :—

- (i) Persian History : Seljûq period.
- (ii) Persian History : Mongol period.
- (iii) Persian History : The Safavids.
- (iv) Persian Epic Poetry.
- (v) Persian Poetry before A.D. 1200.
- (vi) Persian Poetry after A.D. 1200.
- (vii) Sufism.
- (viii) Iranian Philology.

(Candidates must state, when registering, which subjects they select.)

7. Turkish

The examination will consist of seven papers of three hours each.

- 1-2. Translation from specified texts with questions on their language and subject matter.
3. Translation from unspecified texts.
4. Translation into Turkish.
5. History and Literature of the Turkish peoples.
- 6-7. Special subject :—Two papers on **one** of the following subjects to be chosen by the candidate :—

Candidates will be required to show a general acquaintance with the principal Oriental and Occidental works on the subject selected and a more detailed knowledge of the prescribed books. **They must state, when registering, which subject they select.**

- (1) Turkish grammars and word lists in Arabic.
- (2) Turkish literature in Uygur script.
- (3) Literature in Old-Ottoman.
- (4) Literature in Jagatay.
- (5) Ottoman literature from 1500 to 1800.
- (6) Turkish literature from 1800 to the present day.
- (7) Ottoman institutions and diplomatic.
- (8) Developments in Islam under Turkish influence.

Comparative Philology

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Before proceeding to the M.A. in Comparative Philology, candidates who have not passed the B.A. Honours Examination of this or another approved University in a relevant branch will be required to pass a qualifying examination approved by the University. In special circumstances the B.A. General Degree of this University in relevant subjects may be accepted.

In addition to a thesis and an oral examination including a practical test in Phonetics, there shall be a written examination consisting of two papers of three hours each, as follows :—

1. History and Principles of Linguistics and Comparative Philology.
2. **Either** (a) Phonetics (general phonetic theory) ;
or (b) General history of a selected group or sub-group of languages, their phonology, morphology, vocabulary and syntax.

(Candidates must state, when registering, which option they select.)

Schedule of Groups and Sub-Groups for Paper 2(b).

I. Indo-European Groups.

A. Indo-Iranian (Sanskrit and Early Iranian dialects).

Sub-Groups :—

1. Sanskrit, Pali and Prakrit literary and epigraphical ;
2. Sanskrit and Modern Indo-Aryan vernaculars ;
3. Old Iranian and Middle Iranian ;
4. Old Iranian and the new Iranian dialects.

B. Hellenic (Ancient Greek dialects).

Sub-Group : Classical and Modern Greek.

C. Italic (Ancient Indo-European dialects of Italy).

Sub-Group : Latin and Romance Languages.

D. Celtic.

E. Balto-Slavonic.

Sub-Group : Old and Modern Slavonic Languages.

F. Teutonic.

II. Semitic.

III. Chinese.

IV. Finno-Ugrian.

V. Indonesian.

VI. Bantu.

Comparative Philology (Phonetics)

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Before proceeding to the M.A. in Comparative Philology (Phonetics), candidates who have not passed the B.A. Honours Examination of this or another approved University in a relevant branch will be required to pass a qualifying examination approved by the University. In special circumstances the B.A. General Degree of this University in relevant subjects may be accepted.

In addition to a thesis on a Phonetic subject and an oral examination including a practical test in Phonetics, there shall be a written examination consisting of two papers of three hours each, as follows :—

1. History and Principles of Linguistics and Comparative Philology.
2. Phonetics (general phonetic theory).

Philosophy

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Candidates for the M.A. in Philosophy who have not passed the examination for the B.A. Degree with Honours in Philosophy are normally required to pass a qualifying examination of the standard of that examination before entry to the M.A. Examination, unless in any special case the University grants exemption from the general rule.

The examination will consist of any **one** of the following five sections A–E. (**Candidates must state, when registering, which section and options they select.**) Candidates may also be examined orally at the discretion of the Examiners.

A *Logic and Methodology* :—

1. The Logic of Aristotle. [One paper.]
2. Symbolic Logic. [One paper.]
3. Epistemological Logic. [One paper.]
4. Methodology. [One paper.]
5. Prescribed Texts. [Two papers.]

B *Epistemology and Metaphysics* :—

1. History of Epistemology and Metaphysics, Ancient and Modern. [Two papers.]
2. Principles of Epistemology. [One paper.]
3. Principles of Metaphysics. [One paper.]
4. Prescribed Texts in Greek Philosophy. [One paper.]
5. Prescribed Texts in Modern Philosophy. [One paper.]

C *Ethics and Political Philosophy* :—

1. History of Ethics, Ancient and Modern. [One paper.]
2. Principles of Ethics. [One paper.]
3. History of Political Philosophy, Ancient and Modern. [One paper.]
4. Principles of Political Philosophy. [One paper.]
5. Prescribed Texts in Ethics and Political Philosophy. [Two papers.]

D *History of Philosophy* :—

1. History of Greek Philosophy to Aristotle. [One paper.]
2. History of Modern Rationalistic Philosophy from Descartes to Leibniz. [One paper.]

3. History of Modern Empiricistic Philosophy from Francis Bacon to Thomas Reid and J. S. Mill. [One paper.]
4. The Philosophy of Kant, and the History of Post-Kantian Philosophy to Schopenhauer. [One paper.]
5. **Either** (i) History of Post-Aristotelian and Mediaeval Philosophy. [One paper] ;
or (ii) History of Recent Philosophy from Bradley to Whitehead. [One paper.]
6. Prescribed Works of a leading philosopher, either ancient or modern at the option of the candidate. [One paper.]

E *Aesthetics* :—

1. History and Principles of Aesthetics. [Two papers.]
2. History of Aesthetic Criticism. [Two papers.]
3. Prescribed Texts in Aesthetics. [One paper.]
4. Prescribed Texts in Aesthetic Criticism. [One paper.]

Psychology

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Candidates for the M.A. in Psychology who have not passed B.A. Honours in Psychology will be required to pass B.A. Honours in Psychology as a qualifying examination unless specially exempted from it in whole or in part.

The examination will consist of :—

(a) A thesis on a subject to be approved by the University at the time of registration.

(b) Two written papers :—

One paper on the whole branch of study to which the thesis belongs, and one paper connected still more closely with the thesis.

(c) A practical examination.

(d) An oral examination.

After examining a thesis the examiners may recommend that a candidate be rejected without further test.

Slavonic and East European Studies

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Unless in any special case the University grants exemption from the general rule, candidates proceeding to the M.A. Examination in Slovene (*e*), Bulgarian (*g*) or Roumanian (*h*), will be required to pass a special qualifying examination to be prescribed by the University.

Unless in any special case the University grants exemption from the general rule, candidates proceeding to the M.A. Examination in Modern Greek (*p*) will be required to pass B.A. Honours as a qualifying examination in an approved branch of studies.

Unless in any special case the University grants exemption from the general rule, all candidates for branches (*a*) to (*d*) and (*f*) at the M.A. Examination in Slavonic and East European Studies will be required to pass the B.A. Honours Examination in the appropriate branch of Language and Literature, and candidates for branches (*i*) to (*o*) must have passed the B.A. Honours Examination in the appropriate branch of Regional Studies.

Candidates not exempted and presenting themselves for papers of the B.A. Honours Examination as a qualifying examination for the M.A. are not required to take a subsidiary subject.

The following are the subjects, any **one** of which may be offered :—

- (a) Russian Language and Literature.
- (b) Polish Language and Literature.
- (c) Czech and Slovak Languages and Literature. (In the translation and essay papers, candidates must use either Czech or Slovak consistently.)
- (d) Serbo-Croat Language and Literature.
- (e) Slovene Language and Literature.
- (f) Hungarian Language and Literature.
- (g) Bulgarian Language and Literature.
- (h) Roumanian Language and Literature.
- (i) Russian Regional Studies.
- (j) Polish Regional Studies.
- (k) Czechoslovak Regional Studies. (In the translation and essay papers, candidates must use either Czech or Slovak consistently.)
- (l) Yugoslav Regional Studies. (In the translation and essay papers, candidates must use either Serbo-Croat or Slovene consistently.)
- (m) Hungarian Regional Studies.
- (n) Bulgarian Regional Studies.
- (o) Roumanian Regional Studies.
- (p) Modern Greek Literature and History.

The examination will consist of :—(1) a thesis on a subject to be approved by the University at the time of registration ; (2) a written examination ; (3) an oral examination especially on the subject of the thesis.

The written portion of the examination in (a)–(o) above will consist of three papers as follows :—

1. In (a) to (h), an essay in the language concerned. The subjects will have a bearing upon literary themes.

In (i) to (o), **either** an essay in the language concerned **or** an essay in English and a composition in the language concerned. The subject will be connected with the history of the countries concerned.

2. Questions on a subject or subjects cognate to the subject of the thesis, as prescribed by the University at the time of registration.

3. Translation from unspecified texts, which in (a) to (h) will be of a literary kind, and in (i) to (o) will be connected with the history of the countries concerned.

The written portion of the examination in (p) Modern Greek Literature and History will consist of five papers, as follows :—

- (1) An essay in Modern Greek, literary, linguistic or historical.
- (2) History of Modern Greek literature from 1453 to the present day.
- (3) **One** of the following special subjects :—
 - (a) Cretan poetry (including plays) up to 1669.
 - (b) Modern Greek popular poetry.
 - (c) Greek poetry from 1770 to 1880.
 - (d) The work of Koraos and its influence.
 - (e) The work of Psychari and its influence.
 - (f) The work of Kostas Palamas.

(4) **One** of the following periods of Modern Greek History :—

(a) Greece under the Turkish Domination.

(b) From 1800 to 1833.

(c) The reign of King Otho.

(d) The reign of King George I.

(5) For candidates taking (4) (a) :—Greek history from 1800 to the present day.

For candidates taking (4) (b), (c) or (d) :—History of the Near East from 1453 to 1800, with special reference to the Greeks.

(Candidates must state, when registering, which subject and period they select.)

Sociology

All candidates must have obtained the degree of Bachelor of *this* University not less than two academic years previously.

Candidates for the M.A. in Sociology must, unless specially exempted by the University, have passed the B.A. Honours Examination in Anthropology, History, Philosophy or Sociology.

Graduates in Anthropology, History or Philosophy will be examined under Scheme A below and graduates in Sociology under Scheme B.

Scheme A.—The examination will consist of six papers and (at the discretion of the examiners) an oral examination, as follows :—

1. Social Philosophy. [Two papers.]

2. Comparative and Social Psychology. [One paper.]

3. Comparative Social Institutions. [One paper.] The syllabus in this subject will be interpreted as covering the same ground as the syllabus in Comparative Social Institutions at the B.Sc. (Econ.) Examination, but with greater fullness.

4. Comparative Ethics and Religion. [One paper.]

5. Special set works. [One paper.]

6. An oral examination at the discretion of the examiners.

Scheme B.—The examination will consist of :—

(a) A thesis on a subject to be approved by the University at the time of registration ;

(b) Two written papers on a subject cognate to that of the thesis, and prescribed by the University at the time of registration ;

(c) An oral examination.

After examining a thesis the examiners may recommend that a candidate be rejected without further test.

DOCTOR OF PHILOSOPHY

Regulations for the Degree of Ph.D. are contained in a separate pamphlet which may be obtained on application to the External Registrar.

DOCTOR OF LITERATURE

A candidate for the D.Lit. Degree must have obtained the M.A. Degree, or the Ph.D. Degree in the Faculty of Arts, as an External Student.

Nevertheless a candidate who has obtained the B.A. Degree as an External Student may, in exceptional circumstances, be exempted from this requirement on the ground of published work.

A candidate may make application at any time for the Degree and must at the same time submit evidence of his qualifications, such evidence to consist of published papers or books, containing original contributions to the advancement of knowledge. Candidates are warned that, in view of the summer vacation, the result of any entry submitted later than 1 May is liable to considerable delay. All candidates should give preliminary notice of intention to enter three months before sending in their entry forms. In the event of a candidate submitting any conjoint work in support of his candidature he must state fully his own share in the work.

That portion of the work submitted that is deemed by the candidate to be his most important contribution to scholarship shall be written in the English language.

The examiners may at their discretion require the candidate to present himself for an interview.

Every candidate must apply to the External Registrar for an entry-form, which must be returned accompanied normally by not less than four copies of the work or works, and by the entry fee.

Every candidate for the D.Lit. Degree must at each entry pay a fee of 20 guineas (£21).

All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

A diploma for the Degree of D.Lit., under the Seal of the University, shall be delivered to each candidate who has passed, after the report of the examiners has been approved by the Senate. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

M.A. EXAMINATION

SET BOOKS APPENDIX

In this Appendix are given the lists of books set for the next two years, and, provisionally, for the third year. Candidates should be careful to consult the appropriate list.

Candidates who make use of the provisional list should obtain the Regulations issued in September next to ascertain whether any alterations have been made.

UNIVERSITY LIBRARY

Most of the books listed in this Appendix are in the University of London Library, and may be borrowed under the regulations applying to the General Library. Where a particular edition of a book is specified in the Appendix, the copy or copies which are available in the University Library are not necessarily the same.

IMPORTANT NOTE

Except in the case of volumes of selections or anthologies, the editions of set texts given in this Appendix are indicated only for the convenience of candidates. Candidates may study set texts in any accurately printed edition.

M.A. EXAMINATION

Arabic (Classical)

1954, 1955 and (provisionally) 1956

Prose

al-Qur'ān ; Ibn Khaldūn : *Muqaddima* ; al-Jāḥiẓ : *al-Bayān wa'l-tabyīn* (ed. al-Sandūbī), Vol. I.

Poetry

C. J. Lyall : *Commentary on Ten Ancient Arabic Poems* (Calcutta, Bibliotheca Indica, 1894) ; Abū Tammām : *Ḥamāsa*.

Special Subjects

- (1) al-Mubarrad : *al-Kāmil* (to beginning of chapter on the Khawārij) ; Jarīr : *Dīwān*.
- (2) Ibn Rashīq : *al-'Umda* ; al-Mutanabbī : *Dīwān*.
- (3) Ibn 'Abd Rabbihi : *al-'Iqd al-Farīd* (*Kitāb al-Yāqūta*, *Kitāb al-Jauhara*) ; al-Ḥarīrī : *Maqāmāt*.
- (4) al-Maqqarī : *Nafḥ al-ṭib*, chapter 7 ; Muḥammad b. Hānī' : *Dīwān*.
- (5) al-Shauqī : *Works* ; al-'Aqqād : *Works*.
- (6) **Either** al-Suyūṭī : *al-Itqān*,
or al-Baidāwī : *Anwār al-tanzīl*.
(**External candidates must state which option they select.**)
- (7) al-Shahrastānī : *al-Milal wa'l-Niḥal* (ed. Cureton, 1842-46, reprinted Harrassowitz, Leipzig, 1923), pp. 1-200 ; al-Naubakhtī : *al-Firaq* (ed. H. Ritter, Constantinople, 1931).
- (8) Sībawaihī : *al-Kitāb*.
- (9) Texts in *Corpus Inscriptionum Semiticarum*, Pars IV, and in *Répertoire d'Epigraphie Sémitique*, Tomes V-VIII.

Chinese (Classical)

1954, 1955 and (provisionally) 1956

A. Classics

Ch'un ch'iu :—Paper I : Duke Hsi with the commentaries of Tso, Ku-liang and Kung-yang ; Paper II : Duke Hsiang with the commentaries of Tso, Ku-liang and Kung-yang.

B. Buddhism

Miao fa lien hua ching :—Paper I : Chapters I-IV ; Paper II : Chapters V-IX.

C. History

Hsin T'ang shu :—Paper I : Biographies of Han Yü and Yao Ch'ung ; Paper II : Biographies of Sung Ching and Kuo Tzŭ-i.

D. Poetry

The *Shih ching* :—Paper I : *Kuo fêng* section ; Paper II : *Hsiao ya* section.

E. Prose

T'ang Sung pa (ta) chia wên :—Paper I : Book II ; Paper II : Book III.

Classics

A. Scholarship and Literature

1954, 1955 and (provisionally) 1956

Paper 3 : Sophocles ; Thucydides ; Juvenal ; Livy : either *The First Decade* or *The Third Decade*.

(External candidates must state which option they select.)

C. Ancient History

For External Students only.

1954 only

Paper 2 : Greek History from 500 to 445 B.C.

Paper 4 : Roman History from 81 to 44 B.C.

Paper 5 : Herodotus : Books V–IX.

Thucydides : Book I.

Aristotle : *Constitution of Athens*, chapters 22–27.

Plutarch : *Lives of Themistocles, Aristides, Cimon, Pericles*.

Diodorus : Books X.25–XII.22.

Aeschylus : *Persae*.

G. F. Hill : *Greek Historical Coins*, so far as relevant.

M. Tod : *A Selection of Greek Historical Inscriptions to the end of the 5th century B.C.* (Oxford University Press).

Paper 6 : Cicero : *Select Letters* (ed. How, Clarendon Press, 1925–6).
Nos. 1–42, 61–77 ; *Pro Lege Manilia* ; *In Catilinam* I–IV ;
Pro Sestio ; *In Vatinius* ; *De Provinciis Consularibus*.

Sallust : *Bellum Catilinae*.

Caesar : *De Bello Gallico*, Book VII ; *De Bello Civili*, Book I.

Plutarch : *Lives of Crassus, Pompey and Cato Minor*, chapters 1–55.

Hardy : *Six Roman Laws*, so far as relevant.

English

Examination with Thesis

1954, 1955 and (provisionally) 1956

Old Icelandic Texts :—

Selections from *Sturlunga Saga*, Vol. 1 (ed. Guðni Jónsson, Íslendingasagnaútgáfan, Reykjavík, 1948), viz., *Þorgils saga ok Haflíða*, *Sturlusaga*, *Guðmundarsaga dýra*.

Hávamál, tr. 138–end.

Vafþrúðnismál.

Helreið Brynhildar.

Guðrúnarkviða I.

Examination without Thesis

1954 and 1955 only

A.7

Mediaeval Latin

Oxford Book of Mediaeval Latin Verse (ed. S. Gaselee, Oxford, 1928).

Carmina Burana (ed. A. Hilka & O. Schumann, Heidelberg, 1930).

John of Salisbury : *Policraticus* (ed. C. C. J. Webb, Oxford, 1909).

Renaissance Latin

Francisci Petrarcae Epistolae Selectae (ed. A. F. Johnson, Oxford, 1923).

Selections from Erasmus (ed. P. S. Allen, Oxford, 1918).

Pontano : *I Dialoghi* (ed. C. Previtera, Sansoni, Florence, 1943).

Old French

La Chanson de Roland (ed. Whitehead, Blackwell), lines 703–2395.

La Châtelaine de Vergy (ed. Whitehead, Manchester U.P.).

Colin Muset : *Chansons* (éd. Bédier, Classiques français du moyen âge).

Mediaeval and Renaissance Italian

Dante : *Purgatorio* (ed. Casini-Barbi, Sansoni), cantos I–XI.

Petrarca : *Rime* (ed. Carducci-Ferrari, Sansoni), Canzoni 28, 37, 50, 53, 72, 119, 126, 128, 129, 206, 323, 331, 360, 366 ; Sonetti 35, 62, 90, 92, 159, 248, 285, 302.

Castiglione : *Il Cortegiano* (ed. V. Cian, Sansoni).

B.6

Old Icelandic Literature

Laxdaela Saga (ed. E. O. Sveinsson, Levin & Munksgaard).

Gunnlaugssaga (edition published by the Viking Society).

B.7

Old Saxon and Old High German

Old Saxon :—

Heliand, lines 1–779 and 4269 to end, and *Genesis* (in *Heliand*, ed. E. Sievers, Halle, Saale, Berlin 1935, or *Heliand und Genesis*, ed. O. Behagel, Halle, Saale, 1933).

Braune : *Althochdeutsches Lesebuch* (Halle, Saale, 1928) : XXXXV, *Segensformeln* ; XXXXVI, *Taufgelöbnis* ; XXXXVII, *Beichte*.

F. Holthausen : *Altsächsisches Elementarbuch* (Heidelberg, 1921), Nos. 3, 5, 6, 7, 8.

Old High German :—

Braune : *Althochdeutsches Lesebuch* (Halle, Saale, 1928) : Prose : I, *Alte Glossen* ; IV, *Isidor* ; XVI, *Tatian* ; XVII, *Die Strassburger Eide* ; XXIII (Boethius), *Notker* ; XXVII, *Wessobrunner Predigt*. Poetry: XXVIII, *Das Hildebrandslied* ; XXX, *Muspilli* ; XXXI (1 and 2), *Segensformeln* ; XXXII (7), *Otfrid* ; XXXIII, *Petruslied* ; XXXIV, *Christus und die Samariterin* ; XXXVI, *Das Ludwigslied* ; XXXIX, *De Heinrico* ; XXXXII, *Memento Mori*.

Mediaeval Latin

As for A.7.

Renaissance Latin

As for A.7.

Old French and Anglo-Norman

La Chanson de Roland (ed. Whitehead, Blackwell), lines 703–2395.

Fouke Fitz Warin (éd. Brandin, Classiques français du moyen âge).

Colin Muset : *Chansons* (éd. Bédier, Classiques français du moyen âge).

French*Examination without Thesis***For External Students only.**

1954, 1955 and (provisionally) 1956

Special Subjects

B.1. One of the following :—

The *Roman de Renart*.

The *Saint-Graal* in mediaeval French Literature.

The vernacular literature of the Crusades.
The *Roman de la Rose* and its influence.

C.I. One of the following :—

The comédie de mœurs, 1659–1730.
Pre-Romanticism.
The social movement in Romanticism.
The Theatre from 1925.

Hebrew and Aramaic

B. Talmudic and Mediaeval Hebrew Literature and Languages

1. *The Mishnah*

1954

The Orders of Zeraim and Kodashim.

1955

The Orders of Zeraim and Moed.

1956 (provisional)

The Orders of Moed and Nashim.

2. *The Talmud*

1954

Hullin and Sanhedrin.

1955 and (provisionally) 1956

Hullin and Baba Kamma.

6. *Jewish Mediaeval Philosophical Authors*

1954 and 1955

Judah ha-Levi : *Kuzari*.

Maimonides : *Moreh Nebuchim*.

1956 (provisional)

Bahya ibn Paquda : *Hobhoth-ha-Lebhabhoth*.

Abraham ibn Daud : *Emunah Ramah*.

D. Syriac

1954, 1955 and (provisionally) 1956

Paper 1

W. Wright : *The Chronicle of Joshua the Stylite* (Cambridge, 1882).

J.-B. Chabot : *Chronique de Michel le Syriene* (Paris, 1899), Book IX.

W. Wright & N. McLean : *The Ecclesiastical History of Eusebius* (Cambridge, 1898).

Paper 2

A. A. Bevan : *The Hymn of the Soul contained in the Syriac Acts of St. Thomas* (Texts and Studies, vol. V, No. 3, Cambridge, 1897).

E. A. W. Budge : *The Book of Paradise* (London, 1904), vol. II, pp. 93–242.

W. Wright : *The Book of Kalilah and Dimnah* (Oxford, 1884).

E. Akkadian

1954, 1955 and (provisionally) 1956

Assyrian Historical Texts

Cuneiform texts quoted in D. D. Luckenbill : *Ancient Records of Assyria and Babylonia*.

In 1956 only, S. Langdon : *Die neubabylonischen Königinschriften* (Leipzig, 1912).

The Creation Epic

Cuneiform texts quoted in R. Labat : *Le poème babylonien de la création (Enuma Elis)* (Paris, 1935).

Assyrian Laws

Cuneiform texts quoted in Miles & Driver: *Assyrian Laws*.

In 1954 and 1955 only, R. F. Harper : *The Code of Hammurabi* (Chicago University Press).

M. Schorr : *Urkunden des altbabylonischen Zivil- und Prozessrechts* (Leipzig, 1913).

F. Thureau-Dangin : *Lettres de Hammurapi à Samas-hasir* (Paris, 1924).

E. Ebeling : *Neubabylonische Briefe aus Uruk* (Berlin, 1930).

M. San Nicolo und A. Ungnad : *Neubabylonische Rechts- und Verwaltungsurkunden* (Leipzig, 1935).

Literary texts cited in :—

O. Weber : *Literatur der Babylonier und Assyrier* (Leipzig, 1907).

C. J. Jean : *La Littérature des Babyloniens et Assyriens* (Paris, 1924).

Indo-Aryan

A. Classical Sanskrit

1954

Mahābhārata, *Virāṭa parvan*, adhyāyas 1-24 (Bhandarkar Institute ed., Poona).

Sāṃkhyakārikās, with Gauḍapāda's commentary on Nos. 1-5.

Vedāntasāra (ed. Jacob).

Aṣṭādhyāyī, II, 3 (i.e., the 3rd pāda of the 2nd adhyāya) together with the *Kāśikā* commentary thereon.

Harṣacarita (Nirṇayasāgara Press, Bombay), Ucchvāsa I.

Buddhacarita, V-XIII (ed. E. H. Johnston).

Kāvyaḍarśa, Books I and II.

Mahāvīracarita (ed. Todar Mall, Panjab University Oriental Publications, 1928).

1955 and (provisionally) 1956

Patañjali : *Mahābhāṣya* I, 1 ; *āhnikas* 1-3 (ed. Kielhorn, vol. I, pp. 1-50).

Mīmāṃsā-sūtras, with *Śabara-bhāṣya*, I, 1 ; *adhikaraṇas* 1-6 (*sūtras* 1-23).

Bhāmaha, *Kāvyaḍalankāra* i-iii.

Bāṇa : *Kādambarī*, pp. 50-119 of Peterson's edition (Bombay Sanskrit Series ; or Poona Oriental Series, 1951, which has the same page numbers, i.e., from end of *Kathāmukha* to end of *Digvijaya*).

Bhāravi : *Kirātārjunīya* i-iv.

Bhaṭṭi : *Rāvaṇavadha* ix, x.

Narāyaṇa Bhaṭṭa : *Veṇīsaṃhāra*.

B. Pali with Buddhist Sanskrit Texts

1954

Sutta-nipāta, *Uragavagga* (P.T.S. edition).

Anguttara-nikāya, *Catuttha-paṇṇāsaka* (P.T.S. edition, vol. III, pp. 174-246).

Cariyā-piṭaka and *Udāna* (P.T.S. editions).

Visuddhi-magga, Chapter 14 (*Khandha-niddesa*) (P.T.S. edition, pp. 436-480).

1955

Sutta-nipāta, *Uragavagga* (P.T.S. edition).

Anguttara-nikāya, *Catuttha-paṇṇāsaka* (P.T.S. edition, vol. III, pp. 174-246).

Cariyā-piṭaka and *Udāna* (P.T.S. editions).

Visuddhi-magga, Chapter 14 (*Khandha-niddesa*) (P.T.S. edition, pp. 436-480).

Divyāvadāna (ed. Cowell & Neil, 1886), Nos. 1 (*Koṭikarṇa*), 2 (*Pūrṇa*), 17 (*Mandhātā*), 26 (*Pāṃśupradāna*) 38 (*Maitrakanyaka*).

Jātakamālā, ed. Kern (Harvard Oriental Series, Vol. I, 1891), Nos. 2, 6, 7, 31-33.

1956 (provisional)

Sutta-nipāta, *Uragavagga* (P.T.S. edition).

Vinaya Piṭaka (ed. Oldenberg), *Mahāvagga*, *Khandhakas* I, paras. 1-24 (pp. 1-44), and VIII, paras. 1-25 (pp. 268-301).

Mahā-ummagga-jātaka (No. 546), up to and including the *khajjapanaka-pañha* (Fausböll, *Jātaka*, Vol. VI, pp. 329-372).

Visuddhi-magga, chap. 14 (*Khandha-niddesa*) (P.T.S. edition, pp. 436-480).

Divyāvadāna (ed. Cowell & Neil, 1886), Nos. 1 (*Koṭikarṇa*), 2 (*Pūrṇa*), 17 (*Mandhātā*), 26 (*Pāṃśupradāna*), 38 (*Maitrakanyaka*).

Jātakamālā, ed. Kern (Harvard Oriental Series, Vol. I, 1891), Nos. 2, 6, 7, 31-33.

C. Vedic Sanskrit

1954, 1955 and (provisionally) 1956

Ṛgveda, *Maṇḍalas* II-III.

Aitareyabrāhmaṇa, Book I (Bibliotheca Indica, Calcutta, 1895).

Śatapathabrāhmaṇa, Book I.

Chāndogyopaniṣad.

D. Epigraphy and History

1954, 1955 and (provisionally) 1956

Sanskrit inscriptions : *Epigraphia Indica*, Vols. I-VIII, all Sanskrit inscriptions.

Prakrit inscriptions : Hultzsch : *Inscriptions of Asoka* ; *Epigraphia Indica*, Vols. I-XV, all Prakrit inscriptions.

E. Prakrit

1954

Āyāraṅgasutta (ed. H. Jacobi).

Kalpasūtra (ed. W. Schubring).

Karpūramañjarī (ed. S. Konow).

Vasudevahiṇḍī (Ātmānanda ; Jainagrantharatnamālā No. 80, Bhavnagar), Vol. I, pp. 126-156 (*Gandhavvadattāmbho*).

Bhavasattakahā (ed. H. Jacobi), I.

1955 and (provisionally) 1956

Uttarajjhayaṇa-sutta (ed. Charpentier).

Kalpasūtra (ed. W. Schubring).

Karpūramañjarī (ed. S. Konow).

Vasudevahiṇḍi (Ātmānanda ; Jainagrantharatnamālā No. 80, Bhavnagar),
Vol. I, pp. 126–156 (*Gandhavvadattāmbho*).
Kumārāpālāpratibodha (ed. Alsdorf).
Prākṛtānuśāsana (ed. Nitti Dolci).

F. Philosophy

1954 and 1955

Rgveda X, 121, 125, 129.
Upaniṣads : *Śvetāśvatara* ; *Bṛhadāraṇyaka* II, 1 and 4 ; IV, 3–5 ;
VI, 2 ; *Chāndogya*, IV, 1–15 ; VI, 1–16 ; VIII, 1–4.
Tattvakaumudī commentary on *Sāṃkhyakārikās*.
Śaṅkara's introduction to his commentary on *Brahmasūtra*.
Rāmāṇuja's introduction to his commentary on *Brahmasūtra*.
Vasubandhu : *Vijñaptimātratāsiddhi* : *Trimśikā*, with Sthiramati's
commentary (ed. S. Lévi, Bibli. de l'Ecole des Hautes Etudes, fasc.
245, Paris, 1925. Translated into French with notes by Sylvain
Lévi in *Buddhica*, Première Série, Mémoires, Tome 1, 8 parts,
Paris, 1928–29).

1956 (provisional)

Upaniṣads : 1. *Chāndogya* ; 2. *Māṇḍūkya* with Gauḍapāda's *Kārikā*.
Recommended editions with annotated translations into French :
1. by Emile Senart, Paris, 1930 ; 2. by Em. Lesimple, Paris, 1944.
Śaṅkara's introduction to his commentary on *Brahmasūtra*.
Rāmāṇuja's introduction to his commentary on *Brahmasūtra*.
Padmapāda, *The Pañcapādikā*, a commentary on Śaṅkara's *Bhāṣya*,
varṇaka I, sections I–XXVI, pp. 1–20 of the Vizianagram Sanskrit
Series edition, Vol. 2, Benares, 1891.
(See also the translation by D. Venkataramiah, Gaekwad's Oriental
Series, Vol. 107, Baroda, 1948 ; Dr. Paul Hacker : *Untersuchungen
über Texte des frühen Advaitavāda*, Wiesbaden, 1951 ; S. Dasgupta :
History of Indian Philosophy, Vol. 2).
Nyāyasūtra, Book I, with Vātsyāyana's *bhāṣya*.
Nāgārjuna : *Mūlamadhyamakakārikās* with Candrakīrti's *Prasannapadā*,
Ch. XXV, *Nirvāṇaparīkṣā*.
(See edition by L. de la Vallée Poussin, Bibliotheca Buddhica, Vol.
IV, St. Petersburg, 1913 ; English translation by Th. Stcherbatsky :
The Conception of Buddhist Nirvāṇa, Leningrad, 1927, pp. 183–212).

Old and Middle Iranian

For Internal Students only.

A. Old Iranian

1954, 1955 and (provisionally) 1956

Old Iranian :—

The *Gāthās* (any edition).
Hans Reichelt : *Avesta Reader*.
R. G. Kent : *Old Persian*.

Western Middle Iranian :—

H. S. Nyberg : *Hilfsbuch des Pehlevi*, I, pp. 31–39.
Andreas-Henning : *Mitteliranische Manichaica aus Chinesisch-
Turkestan*, II.

Sogdian :—

Vessantara Jātaka, 1–765.
F. W. K. Müller : *Sogdische Texte*, I.

Saka :—

Manuscript E, xxiii–xxv (ed. E. Leumann).

Vajracchedikā, in Hoernle : *Manuscript Remains of Buddhist Literature found in Eastern Turkistan*.

B. Western Middle Iranian

1954, 1955 and (provisionally) 1956

Western Middle Iranian :—

Bundahishn, chapters i–xiii (pp. 1–100) (ed. Anklesaria).

Jamasp-Asana : *Pahlavi Texts*, i–ii.

Shkandgumānikvičār, chapters i–x.

Andreas-Henning : *Mitteliranische Manichaica*, I–III.

Old Iranian :—

Hans Reichelt : *Avesta Reader*, pp. 13–28, 44–53.

R. G. Kent : *Old Persian*, 116–134, 142–143, 148–153.

C. Eastern Middle Iranian

1954, 1955 and (provisionally) 1956

Sogdian :—

H. Reichelt : *Soghdische Handschriftenreste des Britischen Museums*, i–ii.

Müller-Lentz : *Soghdische Texte*, i–ii.

Sogdian texts in Henning : *Manichäisches Bet- und Beichtbuch*, pp. 32–51.

Saka :—

Manuscript E, (ed. E. Leumann).

Suvarṇabhāṣasūtra (ed. S. Konow).

Samghāṭasūtra, in S. Konow : *Saka Studies*.

Avestan :—

Hans Reichelt : *Avesta Reader*, pp. 13–28, 44–53, 81–86.

Italian

Examination without Thesis

For External Students only.

1954, 1955 and (provisionally) 1956

A

L'Intelligenza (ed. L. Di Benedetto, Laterza).

Dino Compagni : *Cronica* (ed. Del Lungo, Le Monnier).

Dante : *Purgatorio* (ed. Casini-Barbi, Sansoni).

Boccaccio : *Filostrato*.

Petrarca : *Il Canzoniere* (ed. Carducci-Ferrari, Sansoni) ; *Trionfi* (ed. Calcaterra, U.T.E.T.).

Sannazzaro : *L'Arcadia* (ed. Carrara, U.T.E.T.).

Castiglione : *Il Cortegiano* (ed. Cian, Sansoni).

Tasso : *La Gerusalemme Liberata* (ed. Ferrari, Sansoni).

T. Campanella : *Poesie* (ed. G. Gentile, Laterza).

Alfieri : *Filippo, Polinice, Antigone, Virginia, Agamennone, Oreste, Merope, Saul, Mirra, Bruto secondo*.

Foscolo : *Odi, Sonetti, Sepolcri* (ed. Marinoni, Hoepli).

Manzoni : *Poesie*.

Leopardi : *I Canti* (ed. Straccali, Sansoni).

Carducci : *Odi Barbare* (ed. Zanichelli).

B

Old Italian

W. Von Wartburg : *Raccolta di antichi testi italiani* (Francke, Bern), Nos. 7, 9, 21, 29, 38, 40, 42, 44.

Paolo di messer Pace da Certaldo : *Libro di buoni costumi* (ed. A. Schiaffini, Le Monnier).

French

The following works in *Les classiques français du moyen age* (Paris, Champion) :—

No. 2. François Villon : *Œuvres* (éd. Longnon et Foulet).

No. 49. Rutebeuf : *Le Miracle de Théophile* (éd. Frank).

No. 66. *Le Charroi de Nîmes* (éd. J. L. Perrier).

Spanish

Poema de mio Cid (ed. Menéndez Pidal, Clásicos Castellanos, La Lectura, Madrid, 1913).

Cervantes : *Don Quijote*, Part I, Capítulos 1-22 (ed. Rodríguez Marín).

Provençal

The following Provençal works in *Les classiques français du moyen âge* (Paris, Champion) :—

No. 11. *Les Poésies de Pierre Vidal* (éd. J. Anglade), Nos. I-XXVI, pp. 1-85.

No. 17. Bertran de Marseille : *La Vie de Saint Enimie* (éd. Brunel).

No. 42. *Les Chansons de Guilhem de Cabestanh* (éd. A. Långfors), pp. 1-23.

No. 45. *La Chanson de Sainte Foi d'Agen* (éd. Thomas).

C

A special study of **one** of the following periods of Italian literature :—

The Age of Petrarca and Boccaccio.

The *Umanesimo* (1397-1494).

The *Rinascimento* (1494-1595).

The *Rinnovamento* (1750-1808).

The *Romanticismo* (1816-1860).

Contemporary Literature (since 1860).

(Candidates must state which period they select.)

Japanese (Classical)

1954, 1955 and (provisionally) 1956

A. Sinto

The Norito text contained in U. Tugita : *Norito-sinkoo* (1929), Meizi-syoin.

B. History

The Nihongi text contained in T. Iida : *Nihon-syoki-tuusyaku*, Vol. IV (1927), Daitookaku, *Kinmei-tennoo-ki* and *Suiko-tennoo-ki-zoku*, pp. 2682-3050.

C. Poetry

The Man-yoo text contained in H. Omodaka : *Man-yoosyuu-sinsyaku*, Vol. I (1931), Hosino-syoten.

D. Prose Literature

The Makura-no-soosi text contained in M. Kaneko : *Makura-no-soosi-hyoosyaku*, Vol. I (1925), Meizi-syoin.

E. Language

Either the Koziki text contained in U. Tugita : *Koziki-sinkoo*, Book II (*tyuukan*) (*sooteiban*, 1935), Meizi-syoin ; or the Kyoogen text contained in *Kyoogen-ki*, Vol. I (1926), Yuuhoodoo-bunko, pp. 1-121 and 257-388.

(External candidates must state which option they select.)

Persian (Classical)

1954, 1955 and (provisionally) 1956

Papers 1-3

General :—

Khāqānī (ed. Lucknow, 1908), Vol. I, pp. 1-151.

Sa'dī : *Tayyibāt*.

'Unşur ul-Ma'ālī Kay Ka'ūs : *Qābūs-Nāma*.

Arabic Texts :—

Qur'ān, Sūras VII and VIII, with Baiḍāwī's *Commentary* (any edition).
Ibn Jubayr : *Rihla* (Gibb Memorial Series, pp. 45-189).

Special Subjects

- (i) ar-Rāwandī : *Rāḥat us-Sūdūr* (Gibb Memorial Series).
Muḥammad Ibrāhīm : *Tārikhi Seljūqiāni Kirmān* (ed. M. Th. Houtsma).
- (ii) Juwaynī : *Tārikhi Jahān Gushā*, Vol. III.
Rashīd ud-Dīn : *Tārikhi Mubāraki Ghāzānī*, pp. 161-364.
- (iii) Zāhidī : *Silsilat an-Nasab* (Berlin).
Zayli Tārikhi 'Ālam Arāyi 'Abbāsī (Tehrān, 1317).
- (iv) Nizāmī : *Haft Paikar*.
Jāmī : *Yūsuf u Zulaykhā*.
- (v) Nāṣiri Khusraw : *Divān* (Tehrān, pp. 2-52, 199-236).
Sanā'ī : *Divān* (Tehrān, 1941, pp. 587-601).
'Unşurī : *Divān* (Tehrān, 1323, pp. 2-27).
Farrukhī : *Divān* (Tehrān, pp. 2-52).
- (vi) *Divāni Shamsi Tabriz* (ed. Nicholson).
Sa'dī : *Divān* (Berlin, 1304, pp. 1-240).
Qā'ānī : *Selections* (Calcutta, 1939).
- (vii) Rūmī : *Maṣnavī* (Gibb Memorial Series, Books I and II).
Najm ud-Dīn Rāzī : *Mirşād al-'Ibād* (Tehrān, 1312).

Philosophy

Examination without Thesis
For External Students only.

A. Logic and Methodology

1954

F. H. Bradley : *Principles of Logic* (O.U.P.).

W. Kneale : *Probability and Induction* (O.U.P.).

Aristotle : *Posterior Analytics* (ed. Ross).

Quine : *Mathematical Logic* (Norton).

1955 and (provisionally) 1956

J. S. Mill : *A System of Logic*.

W. Kneale : *Probability and Induction* (O.U.P.).

Aristotle : *Posterior Analytics* (ed. Ross).

Quine : *Mathematical Logic* (Norton).

B. *Epistemology and Metaphysics*

1954

Greek Philosophy :—Plato : *Timaeus* (ed. Cornford).Aristotle : *De Anima* (ed. Hicks).*Modern Philosophy* :—Joachim : *The Nature of Truth*.Russell : *An Enquiry into Meaning and Truth*.Alexander : *Space, Time and Deity*.

1955 and (provisionally) 1956

Greek Philosophy :—Plato : *Theaetetus* ; *Sophist* ; *Parmenides*.Aristotle : *Physics*, Books I–IV.*Modern Philosophy* :—G. E. Moore : *Philosophical Studies*.A. N. Whitehead : *Principles of Natural Knowledge*.*The Concept of Nature*.Hegel : *The Shorter Logic* (Wallace, Clarendon Press).C. *Ethics and Political Philosophy*

1954, 1955 and (provisionally) 1956

G. E. Moore : *Principia Ethica*.Hobbes : *Leviathan*.R. Price : *Review of the Principal Questions in Morals*.D. *History of Philosophy*

1954

Ancient :—Plato : *Phaedo*, *Republic*, *Theaetetus*, *Parmenides*, *Sophist*, *Philebus*.*Modern* :—Kant : *Critique of Pure Reason*.*Critique of Practical Reason*.*Critique of Judgment*.*Prolegomena to any Future Metaphysic*.

1955

Ancient :—Plato : *Phaedo*, *Republic*, *Theaetetus*, *Parmenides*, *Sophist*, *Philebus*.*Modern* :—Hegel : *Phenomenology*.Spinoza : *Ethics*.*Tractatus de Emendatione Intellectus*.

1956 (provisional)

Ancient :—Aristotle : *Physics*, *Metaphysics*.*Modern* :—Hegel : *Phenomenology*.Spinoza : *Ethics*.*Tractatus de Emendatione Intellectus*.E. *Aesthetics*

1954

Aesthetics :—Collingwood : *Principles of Art*.Empson : *Seven Types of Ambiguity*.B. Croce : *Aesthetics : Science of Expression and General Linguistic*.*Aesthetic Criticism* :—I. A. Richards : *Principles of Literary Criticism ; Practical Criticism*.

1955 and (provisionally) 1956

Aesthetics :—Kant : *Critique of Judgement*.

Empson : *Seven Types of Ambiguity*.

B. Croce : *Aesthetics : Science of Expression and General Linguistic*

Aesthetic Criticism :—I. A. Richards : *Principles of Literary Criticism ; Practical Criticism*.

Coleridge : *Biographia Literaria*.

Portuguese

Examination without Thesis

For External Students only.

1954, 1955 and (provisionally) 1956

A

Garcia de Resende : *Miscellanea*.

Samuel Usque : *Consolaçam às tribulações de Israel* (ed. Mendes Remedios, in *Subsidios Hist. Lit. Port.*, Vols. 8-10, Coimbra, 1906).

Luis de Camões : *Lirica* (ed. J. M. Rodrigues, Coimbra, 1923).

Diogo do Couto : *O Soldado Pratico* (ed. Rodrigues Lapa, Col. *Clássicos Sá da Costa*, Lisbon, 1937).

Francisco Manuel de Melo : *Carta de Guia de Casados* (ed. E. Prestage, 1923).

António Vieira : *Cartas* (3 vols., ed. J. Lucio de Azevedo, 1925-28).

Eça de Queiroz : *O Crime do Padre Amaro*.

Ferreira de Castro : *A Lã e a Neve*.

B

Old Portuguese

Textos arcaicos (3rd edition, J. Leite de Vasconcelos).

Cantigas de Amigo dos trovadores galego-portugueses (ed. J. J. Nunes, Coimbra, 1926).

Fernão Lopes : *Chronica de Dom João* (ed. *Bibl. Clássicos Port.*, Vol. VII).

Spanish

Poema de mio Cid (ed. R. Menéndez Pidal, *Clásicos Castellanos*).

Mateo Alemán : *Guzmán de Alfarache* (*Clásicos Castellanos*).

C

A special study of **one** of the following periods of Portuguese literature :—

1. 1385-1521.

2. 1521-1620.

3. The Seventeenth Century.

4. The Nineteenth Century.

(Candidates must state which period they select.)

Sinhalese

For Internal Students only.

1954 and 1955

Prose

Epigraphia Zeylanica, Vol. III : 4, Badulla pillar-inscription ; 6, Thūpārāma slab-inscription of Gajabāhu I ; 15, Two rock-inscriptions at Vihāregala ; 19, Gāraṇḍigala rock-inscription of Kassapa III ; Vol. IV : 13, Anurādhapura slab-inscription of Khud-dhapārinda ; 14, Nāgarikanda rock-inscription of Kumārādāsa ;

20, Three rock-inscriptions at Rāssahela ; 27, Vessagiriya rock-inscription of Sirināga II.

Katikāvat-saṅgarā (ed. D. B. Jayatilaka, 1922).

Mahābōdhivamśa-granthipadavivarāṇaya, pp. 1-62 (ed. Dharmārāma, 1910).

Thūpavaṃsaya (ed. D. E. Heṭṭiāratchi, 1947).

Milinda Praśnaya (ed. U. P. Ekanāyaka, 1928), pp. 1-202 (i.e., from the beginning up to the end of the *Sela Praśnaya*).

Verse

Siya-bas-lakara (ed. H. Jayatilaka, 1901).

Kavsilūmiṇa : cantos VIII-XV (ed. Maḍugallē Siddhārtha, 1926).

Rajasiha-sirita, parts 1 and 2 (ed. Charles Karunatilaka, 1916, 1918).

Sausatdam-vādaya.

Haṃsa-sandeśaya (ed. Ratmalane Dharmakīrti Sri Dharmārāma, 1926).

Kavminimaldama (ed. A. Saddhātissa, 1903).

1956 (provisional)

Prose

Epigraphia Zeylanica, Vol. I, No. 2, Vessagiri Inscriptions (pp. 10-39) ; No. 22, Jētavanārāma Inscription of Malu-Tisa ; No. 7, The Two Tablets of Mahinda IV at Mihintale ; Vol. II, No. 35, Ambagamuva Rock Inscription of Vijayabāhu I ; No. 17, Poḷonnaruva " Galpota " Slab Inscription ; Vol. III, No. 3, The Oruvala Sannasa.

Katikāvat-saṅgarā (ed. D. B. Jayatilaka, 1922).

Mahābōdhivamśa-granthipadavivarāṇaya, pp. 1-62 (ed. Dharmārāma, 1910).

Thūpavaṃsaya (ed. D. E. Heṭṭiāratchi, 1947).

Milinda Praśnaya (ed. U. P. Ekanāyaka, 1928), pp. 1-202 (i.e., from the beginning up to the end of the *Sela Praśnaya*).

Verse

Siya-bas-lakara (ed. H. Jayatilaka, 1901).

Kavsilūmiṇa : cantos VIII-XV (ed. Maḍugallē Siddhārtha, 1926).

Rajasiha-sirita, parts 1 and 2 (ed. Charles Karunatilaka, 1916, 1918).

Sausatdam-vādaya.

Haṃsa-sandeśaya (ed. Ratmalane Dharmakīrti Sri Dharmārāma, 1926).

Kavminimaldama (ed. A. Saddhātissa, 1903).

Sociology

Scheme A

For External Students only.

1954, 1955 and (provisionally) 1956

L. T. Hobhouse : *Morals in Evolution* (Chapman & Hall).

Essays from Max Weber (trans. Gerth & Mills).

Durkheim : *Rules of Sociological Method*.

Spanish

Examination without Thesis

For External Students only.

1954, 1955 and (provisionally) 1956

A

Poema de mío Cid (Clásicos Castellanos).

Berceo : Milagros de Nuestra Señora (Clásicos Castellanos).

Flor Nueva de Romances Viejos (ed. Menéndez Pidal).

- Juan de Mena : *El Laberinto de Fortuna* (Clásicos Castellanos).
 Fray Luis de León : *Los Nombres de Cristo* (Clásicos Castellanos, 3 vols.).
 San Juan de la Cruz : *El Cántico Espiritual* (Clásicos Castellanos).
 Cervantes : *Don Quijote* (Clásicos Castellanos, 8 vols.).
 Luis Veléz de Guevara : *La Serrana de la Vera* ; Lope de Vega :
Barlaán y Josafat (Teatro Antiguo Español, I and VIII, Centro de
 Estudios Históricos).
 Calderón : *El Mágico prodigioso*.
 Lope de Vega : *Poesías líricas* (Clásicos Castellanos, 2 vols.).
 Feijóo : *Teatro crítico universal* (Clásicos Castellanos, 3 vols.).

B

Old Spanish

- Alfonso el Sabio : *Primera crónica general*, chapter 724 to the end (ed.
 Menéndez Pidal, Nueva Biblioteca de Autores Españoles).
El libro de Apolonio (ed. Marden).
 Santob de Carrión : *Proverbios morales* (ed. Llubera, C.U.P.).
 López de Ayala : *Crónica del rey Don Pedro*.
 Gil Vicente : *Tragicomedia de don Duardos* (ed. Dámaso Alonso).
 Juan de Valdés : *Diálogo de las lenguas* (ed. Janet Perry, University of
 London Press).

Portuguese

- Cantigas d'Amigo dos trovadores galego-portugueses* (ed. J. J. Nunes,
 Coimbra, 1926).
 Bernadim Ribeiro : *Menina e moça* (ed. Carolina Michaëllis de Vascon-
 celos, in *Obras de Bernadim Ribeiro*, Imprensa da Universidade,
 Coimbra).
 Gil Vicente : *Four Plays* (ed. Aubrey Bell, C.U.P.).
 Camões : *Os Lusíadas*, Cantos I-V.

French

- La Chanson de Roland* (ed. Bédier or Whitehead).
 Jean Bodel : *Le Jeu de St. Nicolas* (C.F.M.A.).
 Béroul : *Le Roman de Tristan* (éd. E. Muret).
 Villon : *Poésies*.

Italian

- Dante : *Inferno* (ed. Casini-Barbi, Sansoni).
 Petrarca : *Rime* (ed. Carducci-Ferrari, Sansoni, Florence), Nos. 1-23,
 37, 50-57, 70-75, 122-129, 136-138, 233-246, 268, 365-366.
 Boccaccio : *Decamerone* : Introduction ; I. 1, 8 ; II. 4, 5 ; IV. 4, 9 ;
 V. 8, 9 ; VI. 1, 2, 4, 5, 9, 10 ; VIII. 3, 5 ; IX. 4, 8 ; X. 2, 10.
 Ariosto : *Orlando Furioso* (ed. N. Zingarelli, Hoepli, Milan), cantos
 I-XX.

Catalan

- Muntaner : *Crónica*.
 Bernard Metge : *Lo somni* (Els Nostres Clàssics).
Curial e Guelfa (Els Nostres Clàssics, 3 vols.).
 Maragall : *Poesies*.

C

A special study of **one** of the following :—

1. The Fourteenth Century.
2. The Sixteenth Century.
3. Cervantes's *Obras completas*.
4. The Nineteenth Century.

(Candidates must state which author or period they select.)

Turkish*Examination without Thesis***1954****Papers 1-2****Prose:—**

M. Th. Houtsma : *Recueil de textes relatifs à l'histoire des Seldjoucides*, Vol. III (Leiden, 1902).

Seyyidî Re'is : *Mir'ât el-memâlik* (Istanbul, 1313).

Kitâb Dede Qorqud (ed. E. Rossi, Roma, 1950).

Karagöz II (ed. H. Ritter, Bibl. Islam. 13a).

Poetry :—

Bâqî : *Dîvân* (Istanbul, 1276, pp. 1-36, 60-95).

Nedîm : *Dîvân* (Istanbul, 1340, pp. 18-40, 64-77, 133-188).

Köprülüzâde M. Fuat : *XVI ncı asır sonuna kadar Türk sazşairleri* (Istanbul, 1930).

Paper 5**Literature of the Turkish Peoples :—**

Saadet S. Çagatay : *Türk Lehceleri Örnekleri* (Ankara, 1950).

Special Subjects

(1) Mahmūd al-Kāshgharî : *Dîwān Lughāt at-Turk*.

(2) *Kutadgu Bilig*.

(3) Qādi Burhāneddîn : *Dîvān*.

(4) *Bābur-nāme* (Gibb Memorial Series, I).

(5) Sābit : *Ramazāniyye* (Islamica, III, 1928, 435-478).

Ta'riḥ-i 'Aṭā, Vols. IV and V (Istanbul, 1293).

(6) 'Azîz Efendi : *Mukhayyemat* (Istanbul, 1268 ; 2nd ed. 1284, 3rd ed. 1290).

Köprülüzâde M. Fuat : *Erzurumlu Emrah* (Istanbul, 1929).

Mustafa Nihat : *Türk edebiyatı tarihi* (Istanbul, 1934).

Sa'id Pasha : *Khâtirât I* (Istanbul, 1328).

(7) Seyyid Mustafa : *Netā'ij al-vuqū'āt* (Istanbul, 1294-1327 ; 2nd ed. 1327).

W. L. Wright : *Ottoman Statecraft* (Princeton, 1935).

'Ayn-i 'Alî : *Qānūn-nāme*, and Kâtib Chelebi : *Düstūr el-'amel* (Istanbul, 1280).

L. Fekete : *Einführung in die osmanisch-türkische Diplomatie* (Budapest, 1926).

(8) Köprülüzâde M. Fu'ād : *Türk edebiyatında ilk mutasavvıflar* (Istanbul, 1918).

1955 and (provisionally) 1956**Papers 1-2****Prose :—**

M. Th. Houtsma : *Recueil de textes relatifs à l'histoire des Seldjoucides*, Vol. III (Leiden, 1902).

Sa'deddîn : *Tāj al-tavārīkh* (Istanbul, 1280), I, pp. 131-204.

Ta'riḥ-i Na'imā, reign of Ahmed I until A.H. 1045.

Kitâb Dede Qorqud (ed. Kilisli Rif'at, Istanbul, 1332).

Karagöz II (ed. H. Ritter, Bibl. Islam. 13a), pp. 1-125.

A. Adnan-Adıvar : *Osmanlı Türklerinde ilim* (2nd ed., Istanbul, 1943).

Poetry :—

Külliyât-i Fuzûlî (Istanbul, 1924), pp. 218-438 (Laylâ va Majnûn).

Nedîm : *Dîvân* (Istanbul, 1340), pp. 21-33, 133-178, 191-204.

Mehmet Âkif : *Safahât* (Istanbul, 1943), pp. 331-419 (part VI : *Asim*).

Köprülüzâde M. Fuat : *XVI ncı asır sonuna kadar Türk sazşairleri* (Istanbul, 1930).

Paper 5

Literature of the Turkish Peoples :—

Saadet S. Çagatay : *Türk Lehceleri Örnekleri* (Ankara, 1950).

Special Subjects

- (1) Mahmūd al-Kāshgharī : *Dīwān Lughāt at-Turk*.
- (2) *Kutadgu Bilig*.
- (3) *Qırq vezir* (ed. Belletête, Paris, 1812).
Mes'ūd b. Ahmed : *Suheyh ve Nevbahar* (ed. J. H. Mordtmann, Hanover, 1925).
- (4) *Bābur-nāme* (Gibb Memorial Series, I).
- (5) Sābit : *Ramazāniyye* (Islamica, III, 1928, 435-478).
Ta'rīkh-i 'Atā, Vols. IV and V (Istanbul, 1923).
- (6) 'Aziz Efendi : *Mukhayyelāt* (Istanbul, 1268 ; 2nd ed., 1284 ; 3rd ed., 1290).
Köprülüzāde M. Fuat : *Erzurumlu Emrah* (Istanbul, 1929).
'Abdülhaqq Hamid : *Maqber*.
Khālid Ziyā : *Mā'i ve siyāh*.
Abdülhak Şinasi Hisar : *Çamlıcadaki eniştemiz*.
- (7) Seyyid Mustafa : *Netā'ij al-vuqū'āt* (Istanbul, 1294-1327 ; 2nd ed., 1327).
W. L. Wright : *Ottoman Statecraft* (Princeton, 1935).
'Ayn-i 'Alī : *Qānūn-nāme*, and Kātib Chelebi : *Düstūr al-'amal* (Istanbul, 1280).
L. Fekete : *Einführung in die osmanisch-türkische Diplomatie* (Budapest, 1926).
- (8) Köprülüzāde M. Fu'ād : *Türk edebiyyātında ilk mutaşavvıflar* (Istanbul, 1918).

UNIVERSITY OF LONDON



REGULATIONS

FOR DEGREES IN

ARCHITECTURE

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

B.A. HONOURS EXAMINATION IN ARCHITECTURE

INTRODUCTORY NOTE

The External Degree of B.A. Honours in Architecture is intended primarily for candidates who, having qualified to practise as architects, desire an academic standing. The Examination for the Degree calls for a broader cultural background than is expected for purely vocational purposes. Successful candidates in Part II will be awarded First, Second or Third Class Honours.

QUALIFICATIONS FOR ADMISSION

I. To be admitted to the B.A. Honours Examination in Architecture, Part I, each candidate must :—

(a) have satisfied minimum University and Faculty entrance requirements ;

(b) have been registered as an External Student preparing for the B.A. Honours Degree in Architecture at least three academic years previously ;

(c) *either* :—

(i) hold a certificate awarded on a Higher School Examination recognized by the Ministry of Education as an approved second examination in secondary schools with clear passes at Principal (Main) standard in three subjects and a subsidiary subject taken on the same occasion in subjects corresponding to those which may be offered at the Intermediate Examination in Arts, provided that the Principal subjects shall include Pure Mathematics *and* Applied Mathematics *or* Mathematics (Pure and Applied) and that two of the subjects shall be a Classical Language and another language (which may be English), either of which may be the subsidiary subject.

Candidates who have not qualified for the award of a Higher School Certificate, but who have been permitted to count successes gained in 1949 and 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirements may apply for exemption in corresponding subjects of the Preliminary Examination in respect of these two subjects ;

or

(ii) hold a General Certificate of Education with passes at Advanced Level in three subjects taken on the same occasion and corresponding to those which may be offered at the Intermediate Examination in Arts, provided that the Advanced Level subjects shall include Pure Mathematics *and* Applied Mathematics *or* Mathematics (Pure and Applied), and a language (which may be English). A candidate who has not passed in a Classical Language, at the Advanced Level will be required to pass a special examination in Latin or Greek before being permitted to proceed to the Final Examination ;

or

(iii) pass a Preliminary Examination at an approved standard in Pure Mathematics, Applied Mathematics *or* Mathematics (Pure and Applied), a Classical Language and another language, or in any of the subjects in which he has not qualified.

(Until further notice the Preliminary Examination will be the Intermediate Examination in the relevant subject or subjects, and the entry fee will be £2 2s. for each subject taken up to a maximum of £6 6s. Candidates should consult the Regulations for the Intermediate Examination in Arts.)

(d) have completed one of the qualifications required in (c) above not less than two academic years earlier ;

(e) *either* :—

(i) have successfully completed the five years' course in Architecture at a School recognized by the University ;

or

(ii) have passed the Final Examination of the Royal Institute of British Architects ;

or

(iii) be a registered architect ;

(f) have obtained approval of candidature as an External Student preparing for the B.A. Honours Degree in Architecture, Parts I and II, in accordance with the dates prescribed.

2. To be admitted to the B.A. Honours Examination in Architecture, Part II, each candidate must have passed Part I.

DATE OF EXAMINATION

Each part of the examination shall take place once in each year ; Part I shall commence on 1 November and Part II on the first Thursday after 3 June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the B.A. Honours Examination in Architecture during the period January-February of the year in which Part I of the examination is to be taken and not later than 1 March in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 1 March applications may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 1 April.

Each candidate when making his application for approval of candidature for Part I of the examination is required to submit the subject of the design and programme required in Section (c) of the Scheme of Examination for Part I, the proposed field of study for the two Essay papers in Part II (A), and the architectural subject selected for the dissertation in Part II (B), and approval of candidature will not be completed until approval has been given by the University to these subjects.

ENTRY TO EXAMINATION

A candidate may not enter for Part II of the examination until he has passed Part I.

The candidate lists for Part I and Part II will be opened on 20 March. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from

the University after 24 April, and the candidate list will be closed on 1 May. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry, but candidates are advised that the Oral Examination, if required, can be held only in London.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

Part I	..	..	..	..	..	..	..	£	s.
								8	8
Part II	..	..	..	..	..	..	..	5	5
Part II (re-entry)	..	..	..	..	..	..	..	6	6

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Preliminary Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Preliminary Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank, Ltd., Tavistock Square, W.C.1, University of London Account".

3. Conditions governing the return of examination fees are printed in the General Regulations (*see* p. ix). In the case of the B.A. Honours Examination in Architecture no refund of part of the entry fee can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION

1. The examination shall consist of two Parts. Each candidate will be required to satisfy the examiners in Part I before proceeding to Part II.

Part I. Each candidate will be required :—

(a) to submit works in any *two* of the following groups :—

(i) Drawings from the cast or from life.

(ii) Studies in Architectural detail.

(iii) One example of an Architectural model in relief or two sheets of sketches from actual buildings.

(b) to submit not fewer than three sheets of work measured and drawn by the candidate, supported by the candidate's original plotting.

(c) to submit a design for a building of the candidate's own choice ; the subject of the design and programme to be submitted to the University for approval.

(d) to attend an Oral Examination if required to do so by the examiners.

Candidates must forward their drawings under (a), (b) and (c), packed flat in a portfolio, so as to reach the Superintendent of Examinations not later than 1 October. The drawings required in each of the sub-sections (i), (ii) and (iii) of (a) and those in sections (b) and (c) respectively should be sent in separate paper covers.

Part II (A). *Written Examination*

Four papers will be set :—

(i) European Architecture from the fifth to eighteenth centuries inclusive. (Two papers).

(ii) Two Essay papers in each of which the candidate will be required to write a critical essay, one on a period and the other on a type of architecture. The candidate shall submit his proposed field of study for each of these two papers to the University for approval at the time of application for approval of candidature.

Part II (B). *Dissertation*

A dissertation which shall be a critical exposition, written in English, of an architectural subject selected by the candidate and approved by the University.

The dissertation may be submitted at the time of entry to Part II of the examination or within a period of twelve months after the candidate has completed and passed both Part I and the written papers of Part II.

2. Candidates who fail in Part I will be required, if they present themselves in a subsequent year, to submit a new design subject under Section (c).

3. A candidate who fails in Part II of the examination will be required to re-submit for inspection the drawings comprising Part I when he re-enters.

4. All answers to examination questions shall be written in English unless instructions are given to the contrary.

5. The examiners shall be at liberty to test any candidate by means of oral questions.

6. There are no exemptions from any part of the examination for the External B.A. Honours Degree in Architecture.

TIME TABLE

The written examination in Part II will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. Lists of successful candidates for Part I and II of the Examination will be published in alphabetical order.

2. The Pass List for Part I of the Examination will be published by the External Registrar on 1 January and the Pass List for the written examination in Part II will be published on 15 August. The Pass List of candidates who have completed the whole examination including the dissertation in Part II will be published from time to time as soon as practicable after the reports of the examiners have been received.

3. A copy of the Pass List will be sent to each successful candidate, and an individual notification to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates for the External B.A. Honours Examination in Architecture who have already passed Part I and have completed more than half of the written papers in Part II are eligible to apply for an Aegrotat Degree. They may be required to attend for a special Oral Examination.

(2) A candidate for the award of an Aegrotat Degree who has not already submitted his dissertation in Part II of the Examination will not be considered for the award until the dissertation has been submitted.

(3) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days of the last day of the written Examination.

(4) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.

(5) An Aegrotat Degree will be awarded without distinction or class.

(6) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or Higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.A. under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

M.A. IN ARCHITECTURE EXAMINATION

INTRODUCTORY NOTE

Candidates for the award of the Degree of Master of Arts in Architecture as External Students are required to have taken the B.A. Honours Degree in Architecture of this University not less than four academic years previously.

REGULATIONS FOR THE REGISTRATION OF EXTERNAL STUDENTS FOR HIGHER DEGREES

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma or postgraduate certificate will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry to the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee, provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and withdraws, fails, or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required to cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted. A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed in the Regulations, obtain the necessary entry papers, and return them to the University with the examination fee.

FEES

								£	s.
Registration Fee	..	..	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	..	..	2	2

QUALIFICATIONS FOR ADMISSION

To be admitted to the M.A. Examination in Architecture, each candidate must (a) have obtained the degree of Bachelor of *this* University. Candidates who have not obtained the B.A. Honours Degree in Architecture of this University will be required to pass the B.A. Honours Examination in Architecture as a qualifying examination not less than four academic years previously. Such candidates must make their entry by the date prescribed for the B.A. Examination, and must have applied for approval of candidature four months before the last date of entry, but in no case shall their names appear on the B.A. Honours Pass List for the year ; (b) have been registered as an External Student preparing for the M.A. Examination at least twelve months before the last date of entry.

DATE OF EXAMINATION

The examination shall take place once in each year during the months of June and July.

REGISTRATION

Candidates should normally register during the period January—March in the year preceding that in which they propose to enter for either part or for the whole examination.

Each candidate when making his application for registration is required to submit the subject proposed for the thesis in Part I of the examination and registration will not be completed until approval has been given by the University to this subject.

ENTRY TO EXAMINATION

A candidate may enter for examination in either Part or for the examination as a whole.

The candidate lists will be opened on 21 December. Entry for either Part or for both Parts must be made on the appropriate form which may be obtained on application to the External Registrar. Entry forms will not be despatched by post from the University after 24 January, and the candidate list will be closed on 1 February.

No entry can be accepted after the candidate list has been closed.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

The thesis for Part I of the examination and the design for Part II must be submitted to the University not later than 15 June.

EXAMINATION FEES

1. Fees are as follows :—

						£	s.	d.
Whole Examination	..	..	..	..	..	15	15	0
Part I	..	..	..	..	..	7	17	6
Part II	..	..	..	..	..	7	17	6

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank, Ltd., Tavistock Square, W.C.1, University of London Account".

3. A candidate who withdraws from the examination after the last date of entry but not later than 15 April may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Refund of Examination Fees (*see* General Regulations p. x).

SCHEME OF EXAMINATION

1. The examination shall consist of two Parts which may be taken either separately or together.

Part I

Each candidate will be required :—

To submit a thesis which shall be written in English on a subject approved by the University falling within any *one* of the following four definitions :—

- (i) An enquiry into some aspect of historical building, showing original research and making some contribution to knowledge.
- (ii) An enquiry into present-day materials and methods of construction or the application of scientific principles of construction in building.
- (iii) An enquiry into the decoration and furnishing of buildings (Historic or Modern).
- (iv) An enquiry into the principles of architectural town-planning and their application to a particular area.

Part II

Each candidate will be required :—

To submit a design for a public or private building of importance prepared for a definite site but not necessarily carried out. If the design is unexecuted it is to be illustrated by sufficient working drawings, rendered elevations and perspective sketches to explain its main features. If the design has been executed it is to be illustrated by photographs. Constructional details are to be shown, accompanied by a written report stating briefly the materials used or proposed to be used in the several parts and outlining the system of sanitation, heating and lighting.

2. The examiners may, if they think fit, require a candidate to submit to a test in design carried out under supervision and to produce evidence of work carried out.

3. The examiners shall be at liberty to test any candidate by means of oral questions.

4. A candidate who fails at any portion of the examination may, with the consent of the examiners, present himself for re-examination in that portion in a subsequent year.

NOTIFICATION OF RESULT

1. The names of candidates for the Degree of M.A. in Architecture who satisfy the examiners shall be arranged in alphabetical order in a list to be published at the University. A mark of distinction will be placed against the names of those candidates who show exceptional merit.

2. A copy of the Pass List will be sent to each successful candidate and an individual notification to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of M.A. in Architecture under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

UNIVERSITY OF LONDON



REGULATIONS

FOR THE

DIPLOMA IN GEOGRAPHY

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations, which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

EXTERNAL DIPLOMA IN GEOGRAPHY

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must :—

- (a) have satisfied minimum University entrance requirements ;
- (b) have obtained a pass in Geography at Ordinary Level at a General Certificate of Education Examination *or* produce evidence of having a qualification at least equivalent to such a pass.
- (c) have been registered as an External Student preparing for the Diploma in Geography ;
- (d) have obtained approval of candidature not later than 8 November in the year next but one preceding the examination (except that candidates who can produce evidence of a qualification in Geography at least equivalent to the standard required at an Intermediate Examination may apply to enter for the Diploma Examination six months after registration and approval of candidature) ; and
- (e) have obtained approval of his dissertation area not less than three calendar months before the last date of entry.

DATE OF EXAMINATION

The examination shall be held once in each year, beginning on the second Monday in June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the Diploma in Geography Examination during the period September—October in the year next but one preceding the examination and not later than 8 November. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 8 November, applications may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 8 April in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 27 March. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry, together with two printed or typed copies of the dissertation as required by the regulations, as early as possible. Entry forms will not be despatched by post from the University after 1 May, and the candidate list will be closed on 8 May. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of making entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Each entry for whole examination	5	5
Re-entry in one part	3	3

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. Conditions governing the Return of Examination Fees are printed in the General Regulations (see p. ix). In the case of the Geography Diploma Examination no refund of part of the entry fee can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION

A. General Regional Geography (three papers) :

Paper 1 : The British Isles, and

General Geography : The distribution of land and water, of major relief features, of climatic and vegetation regions, and the broad influence of these physical factors on the distribution of man and his work, leading up to a division into major geographical regions.

Paper 2 : A study of Europe, including the Mediterranean lands of Asia and North Africa.

Paper 3 : A study of North America and the Monsoon Lands of Asia.

B. Physical Basis of Geography (one paper) :

A broad knowledge to form a basis for the study of regional geography.

The movements of the earth and the resulting diurnal and seasonal changes.

Distribution and periodic variation of atmospheric pressure and temperature, wind systems, precipitation ; climatic types.

Form of sea and ocean beds and the chief regular movements of the surface waters of the oceans.

General classification of the materials of the earth's crust : processes of denudation and deposition : typical land forms.

C. Map Work (one paper) :

The study and interpretation of the principal maps of the Ordnance Survey and of the International 1/M map.

The study and use of atlas maps, including some knowledge of the principles of the net-works commonly used.

Simple methods of survey, including the use of the chain, plane-table, prismatic compass and clinometer.

Cartographic and diagrammatic expression of data relating to climatic, economic and population (demographic) facts.

(A minimum standard of attainment will be fixed in each of the three foregoing subjects, but candidates will be required to have reached a higher standard in not less than two of the subjects.)

D. A Dissertation :

A short dissertation on a particular area to which he has access during the time of the preparation of the dissertation, to be selected by the candidate subject to the approval of the University.

On or before 8 February of the year in which he proposes to enter for the examination every candidate must submit for approval the title of his dissertation together with a brief description thereof.

Candidates who enter for the examination and fail to satisfy the examiners either in the written papers or in the dissertation may be permitted to offer themselves for examination in that part alone in which they previously failed to satisfy the examiners.

All answers to examination questions shall be written in English unless instructions are given to the contrary.

No exemption is granted from any subject of this examination.

TIME TABLE

The examination will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. A provisional list of successful candidates arranged in alphabetical order will be published by the External Registrar at two o'clock on Saturday in the fifth week after that in which the examination closes.

2. A copy of the Pass List will be sent to each successful candidate; and an individual notification will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A certificate, under the seal of the University, shall be delivered to each successful candidate.

UNIVERSITY OF LONDON



REGULATIONS FOR THE POSTGRADUATE CERTIFICATE IN EDUCATION (FORMERLY TEACHER'S DIPLOMA) for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

POSTGRADUATE CERTIFICATE IN EDUCATION**(Formerly Teacher's Diploma)****QUALIFICATIONS FOR ADMISSION**

To be admitted to the examination each candidate must

- (a) have satisfied minimum University entrance requirements ;
- (b) be a Graduate of a British or other approved University, or have passed all the examinations required for a degree in other approved Universities ;
- (c) have had (i) one year's postgraduate training as a teacher in an approved training college, *or* (ii) three years' approved postgraduate experience as a full-time teacher in an approved school or schools, *or* (iii) four years' approved experience as a full-time teacher in an approved school or schools, of which at least one year must be postgraduate ; and
- (d) have been registered and have obtained approval of candidature as an External Student preparing for the Postgraduate Certificate in Education.

DATE OF EXAMINATION

The examination will be held once in each year, and the written part will commence on the first Wednesday after 23 June. A supplementary practical examination for candidates referred in the practical test will be held in London early in December.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the Postgraduate Certificate in Education Examination during the period September-October in the year preceding the examination and not later than 1 November in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 1 November, applications may be accepted after that date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 1 March in the year of the examination.

A referred candidate will be permitted to re-apply for approval of candidature for the practical examination in the following December without fee, provided he re-applies for such approval within two months of his being referred.

ENTRY TO EXAMINATION

For the July examination, the candidate list will be opened on 19 February, and for the December (supplementary) examination on 5 September. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 March (after 10 October for the December examination), and the candidate list will be closed on 1 April (17 October for the December examination). No entry can be accepted after the candidate list has been closed.

Every candidate wishing to submit any record of training or experience in teaching on Form A mentioned under "Scheme of Examination" below must do so when making his entry ; if used, Form B (similarly mentioned) must be returned to the University by the date stated upon it.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Each entry for the whole or written portion of the examination	6	6
Re-entry for practical part only	3	3

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 June in the case of the July examination nor later than 1 November in the case of the December examination may apply for a refund of part of the entry fee paid in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix).

SCHEME OF EXAMINATION

1. The examination shall be both written and practical, and the written part shall extend over three days.

2. The practical part will be held both before and after the written examination, and all necessary details will be announced to each individual candidate.

3. While the examination is primarily a test of professional equipment and technique, the greatest importance will be attached to the grammatical and effective use of English and to indications of the candidate's general education.

4. When applying for approval of candidature, candidates will be required to state for the approval of the University what subject or subjects they propose to offer for the examination in Special Method and for the practical examination. Such approval will not normally be withheld in subjects which are generally taught in Elementary or Secondary Schools.

If more than one subject is offered, the subjects should be listed in the order of the candidate's preference.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

6. No exemption is granted from any subject of this examination.

Written Examination

I. The Principles of Education (Two papers)

Candidates who are qualifying for the examination through one year's postgraduate training in an approved training college will take one paper consisting of questions upon the syllabus set out on page 505. The Examiners will take into account the essays written by the candidate as part of his course.

Other candidates will be required to take, in addition, a paper consisting of a number of essay-subjects, from which the candidate will be required to choose not more than three.

II. Special Method (One paper)

The paper will be set in such a form that candidates may either confine themselves to questions dealing with a special subject and the subjects closely related thereto, or show a general knowledge of the methods of teaching the more elementary parts of several subjects of the school curriculum.

III. Psychology (One paper of two hours) and **Health Education** (One paper of two hours).

IV. The Present Educational System of England and its Recent History (One 2-hour paper)

V. Either (a) Educational Psychology (One paper)

The examiners may require the reproduction of any candidate's note-book or record of practical exercises.

or **(b) History of Education** (One paper)

or **(c) Comparative Education and Administration** (One paper)

or **(d) The Development of Education in Tropical Areas** (One paper)

Candidates must state, when applying for approval of candidature, which option they select.

Practical Examination

1. Practical skill in teaching will be tested by means of a lesson to be given to a class in the presence of the examiner at some school in or near London. The University will arrange for the candidate to visit the school before the practical examination. Candidates who have been teaching in or near London will be invited to state on their entry form the name and address of their school. The lesson in the practical examination will, if necessary, be followed by discussion.

2. As a guide to the University in determining the nature of the test, every candidate must, when making entry to the examination, state which subject or subjects and what particular branches of these subjects he offers as teaching subjects. In addition every candidate must state the age-range of the classes which he considers he is best able to teach, and the type of school to which he is accustomed.

3. Candidates will in due course be informed of the date of the test lesson ; but the nature of the lesson they will be required to give will not be communicated to candidates until about a week before it is to be given. Each candidate will then be informed as to the title and scope of the lesson to be given and he will be furnished with particulars of the previous knowledge, numbers, average age, and composition of the class. He will then be expected to prepare notes of a suitable lesson showing the subject-matter to be dealt with, the aim of the lesson, and the method of presentation. A copy of these lesson notes must be handed by the candidate to the examiners immediately before the lesson begins.

4. In giving the lesson candidates will be expected to follow in the main the course described in the notes. They must, however, adapt their lesson to the needs of the class before them, and show skill in questioning a class for teaching purposes.

5. Any special apparatus, maps, diagrams or other materials for the lesson which would not normally be obtainable at a reasonably well equipped school must be provided by the candidate.

6. Candidates are permitted to submit as additional evidence of practical skill in teaching any records that may be available as to their training and/or experience. Such records if submitted must be set out on the appropriate form A provided with the entry form. Candidates are further permitted to invite the Principal of their Training College (or, if they are not in attendance at a Training College, some person who is willing to act) to make use of form B similarly provided, which must be sent direct to the University by the official concerned. All statements on these forms must be duly authenticated and the records on form A

will, on request at the time of entry, be returned after the examination is completed. Statements on form B will be regarded as confidential and will in no circumstances be communicated to the candidate.

In the case of candidates who are qualifying for the examination through a course at an approved college in or near London the examiners may test practical skill in teaching by visiting the candidate at the school in which he is doing his final period of teaching practice. Such candidates *must* make use of Form B.

REFERENCE

A candidate who fails to satisfy the examiners in the theoretical or the practical part of the examination may be permitted to present himself in that part only at a subsequent examination, and if he attains a sufficiently high standard will be recommended by the examiners for the award of the Postgraduate Certificate in Education, but, if upon re-examination he fails again to satisfy the examiners, he shall not be recommended for the award unless and until he satisfies the examiners at some subsequent examination both in the written examination and in the examination in practical teaching.

TIME TABLE

1. The examination will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

2. The practical part of the examination will be held both before and after the written examination. Due information as to date, time, school, and lesson chosen will be sent to each candidate, who must provide himself with all materials necessary for the selected lesson, except such equipment as may normally be found in schools.

NOTIFICATION OF RESULT

1. A provisional list of successful candidates, arranged in alphabetical order, will be published by the External Registrar on 9 August. A mark of distinction (the nature of which will be indicated on the Certificate awarded) will be placed against the names of those who excel either in the practical or in the written part or in both, provided that they pass the whole examination at the same time.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AWARD OF CERTIFICATE

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A certificate, under the seal of the University, shall be delivered to each successful candidate.

SYLLABUSES

I. The Principles of Education

The concept of education ; educational aims ; relation of aims to differing presuppositions about human beings and the kind of world they live in.

The social setting of education.

Typical "philosophies" of education.

Standards and values.

Principles of curriculum building ; general and specialized education ; different kinds of knowledge and experience (e.g., scientific, through the arts, through religion).

Candidates who are qualifying for the examination through a one year's postgraduate course in an approved training college will, as part of that course, be required to write essays upon topics falling within the above-named or cognate subjects prescribed by the authorities of the institutions, and to submit them for scrutiny by the examiners at the time of making entry.

II. Special Method

The methods of teaching a special subject or group of subjects of school instruction.

III. Psychology and Health Education

A. Psychology

The general bearing of psychology upon the theoretical and practical problems of education.

The psychology of individual differences : general intelligence, its nature, measurement and distribution ; temperament and character ; instinct and emotion.

The psychology of teaching methods, and of the fundamental school studies.

B. Health Education

The general characteristics of living organisms ; the interactions between organisms and their environment.

The main features of the development of organisms from the ovum. Heredity. Individual variations.

The broad principles in general physiology.

The conditions of healthy physical life and development of children at home and at school.

The functions and responsibilities of teachers with reference to health and disease. Medical inspection.

IV. The Present Educational System of England and its Recent History

The more important features of the present educational system of England.

The influences that have mainly determined the history and form of the system since the beginning of the twentieth century.

V. (a) Educational Psychology

The general methods of psychology with special reference to educational problems.

Simple exercises on psychological methods ; mental work ; mental testing ; the economy and technique of learning.

The practical examination of individual cases.

V. (b) History of Education

One or more of the historical periods (A, B, C, D, E, F,) set forth below together with the study of one or more of the works in the attached lists illustrating the periods.

The University will prescribe which period or periods and which work or works shall be studied for each year's examination (see below).

A. Education in Ancient Greece and Rome :—

Plato : *Republic* (selected books).

Aristotle : *Ethics* (selected books) ; *Politics* (selected books).

Quintilian : *Institutes of Oratory*, I, II, X, XI, XII.

B. Education in Western Europe from the fall of the Roman Empire to 1400 :—

St. Augustine : *Confessions*.

Quintilian (the books mentioned in A, with special reference to Colson's edition of the *Institutio*, Book I).

Mediaeval Lore from Bartholomæus Anglicus (ed. R. Steele, King's Classics).

Leach : *Educational Charters* (selections).

C. Education in Western Europe, 1400-1630 (with special reference to England) :—

The Tractates (one or more) translated in W. H. Woodward : *Vittorino da Feltre*.

The educational treatises of Erasmus (in *Erasmus concerning Education*, Part II, ed. W. H. Woodward).

Erasmus : *Letters* (selections).

Elyot : *The Boke named the Governour*.

Ascham : *The Scholemaster*.

Leach : *Educational Charters* (selections).

Mulcaster : *Elementarie* (Oxford University Press).

Wilson : *Art of Rhetorique* (Dent).

D. Education in Western Europe, 1630-1800 (with special reference to England) :—

Bacon : *The New Atlantis ; Essays*.

Milton : *Of Education*.

Comenius : *The Great Didactic*.

The educational writings of John Locke (ed. J. W. Adamson).

The Port-Royalists on Education (ed. H. C. Barnard).

Rousseau : *Emile*.

Sir Joshua Reynolds : *Discourses*.

Edgeworth : *Practical Education*.

E. Education in England since 1800 :—

The educational writings of Pestalozzi (ed. J. A. Green).

Wordsworth : *The Prelude*, Books 1-5 ; *The Excursion*, Books 8, 9.

The chief educational writings of Froebel (ed. Fletcher and Welton).

Newman : *The Idea of a University*.

M. Arnold : *Reports on Elementary Schools*.

M. Arnold : *Culture and Anarchy* (any edition).

T. H. Huxley : *Science and Education*, Essays 4-9, 15-17 (Macmillan, 1902).

Herbart : *General Pedagogy* (in the original or translation).

Selected essays and addresses from Carlyle, Ruskin, J. S. Mill, Herbert Spencer, William Morris, R. L. Stevenson.

James Mill : *On Education*, and J. S. Mill : *Address at St. Andrews* (ed. F. A. Cavenagh, Landmarks in the History of Education Series, 1930, Cambridge University Press).

Sir James Kay-Shuttleworth : *Four Periods of Public Education* (a report of the pamphlets of 1832, 1839, 1847, and 1861, together with other material, including the *Reports*, on Battersea : Longmans, 1862).

Herbert Spencer : *Education*.

F. Education in the British Empire, with special reference to :—

Either (a) One or more of the Dominions, to be specified from time to time,

or (b) India,

or (c) a group of Colonies and Dependencies, to be specified from time to time.

Prescribed Periods and Texts

1954, 1955 and 1956* (*Provisional only; subject to confirmation in September 1954).

E. Education in England since 1800 :—

One of the following :—

Newman : *The Idea of a University* (ed. May Yardley) ;

James Mill : *On Education*, and J. S. Mill : *Address at St. Andrews* (ed. F. A. Cavenagh, Landmarks in the History of Education Series, 1930, Cambridge University Press).

Matthew Arnold : *Culture and Anarchy* (any edition).

V. (c) Comparative Education and Administration

The education systems of countries other than England (especially Scotland, France, Germany and the United States of America) : a study in general outline.

V. (d) The Development of Education in Tropical Areas

VI. Practical Training in Teaching

The course for candidates who are qualifying for the examination through one year's postgraduate training in teaching will be expected to include :—

The preparation of lessons ; the giving of lessons under supervision.

The observation of teaching in a school or schools.

Training in the general duties of a teacher in a school.

UNIVERSITY OF LONDON



REGULATIONS FOR THE DIPLOMA IN EDUCATION for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations, which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

EXTERNAL DIPLOMA IN EDUCATION

The standard of the examination for the Diploma in Education is considerably higher than that of the Teacher's Diploma, Postgraduate Certificate in Education, or the Teacher's Certificate.

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination for the Diploma in Education each candidate must

- (a) have satisfied minimum University entrance requirements ;
- (b) be a Graduate of a British or other approved University, or have passed all the Examinations required for a Degree in other approved Universities ;
- (c) have (i) obtained the Teacher's Diploma, Postgraduate Certificate in Education, or Teacher's Certificate of this University, *or*
 - (ii) undergone a course of training for the profession of teaching approved by the University for this purpose and have passed an approved professional examination, *or*
 - (iii) have obtained qualifications accepted by the University as equivalent to one of the foregoing ;
- (d) have been registered and have obtained approval of candidature as an External Student preparing for the Diploma in Education.

DATE OF EXAMINATION

The examination will be held once in each year, commencing on the fourth Monday in May, except if that day be Whit Monday, when the examination will begin on the following Tuesday.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the Diploma in Education Examination during the period September—October of the year preceding the examination and not later than 1 November in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 1 November, applications may be accepted after that date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 28 December. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 January and the candidate list will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a provincial centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole examination	7	7
Supplementary Subject	2	2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix).

SCHEME OF EXAMINATION

1. The examination will be a Pass Examination only, in *three* subjects to be chosen from the following list, in accordance with the following rules :—

I. General Theory of Education (One paper)

Definitions and aims of education. What the education process includes.

The outstanding theories of education, past and present. The problem of standards and whether they can be rationally justified. The effects upon educational thinking and practice of religious belief, agnosticism and non-belief, Moral education : education for "society," "citizenship," "democracy." Discipline and Freedom. The content of education and the principles affecting curriculum-planning. The divisions and the unity of knowledge : science, arts and religious education. The relation between the understanding of education in terms of subjects taught, and of persons and personal relations.

II and III. Any *two* of the following subjects :—

(Candidates must state, when applying for approval of candidature, which subjects they select and which option if offering (e) or (g).)

(a) The Philosophy of Education (Two papers)

Aims and purpose of education. Critical examination of the assumptions, ideas and beliefs involved in the theory and practice of education. Philosophical consideration of questions arising from the scientific, aesthetic, moral, social, political, religious and metaphysical aspects of education. Principles of curriculum in school and University education. General theory of methods.

Candidates who wish to offer this subject must obtain special permission to do so from the University when applying for approval of candidature, and must produce satisfactory evidence of their facilities for study.

(b) Comparative Education (Two papers)

Paper 1 : General principles and problems of comparative education.

Paper 2 : The education system of a particular country or group of countries outside the United Kingdom.

A candidate is recommended to offer for Paper 2 a country or group of countries in respect of which it would be possible for him to read with ease the source material available.

Candidates must submit details of the country or countries they propose to study for approval by the University when applying for approval of candidature.

(c) Educational Psychology (Two papers)

Paper 1 : Methods and results of experimental research in education and relevant aspects of general psychology.

Paper 2 : Human development and relevant aspects of social psychology. Questions will also be set on Advanced Educational Statistics and candidates may, if they wish, specialise in this subject.

(d) History of Education (Two papers)

The history of the practice and organisation of education and the development of educational thought in Europe from the fifth century B.C. to the present day, with increasing emphasis on the United Kingdom in the later centuries.

(e) Educational Sociology (Two papers)

Either (i) **General Educational Sociology**

Paper 1 : Contemporary social, administrative and industrial problems in relation to education in Great Britain.

Paper 2 : Social aspects of education both within the school and in regard to the community.

or (ii) **Anthropology and Sociology** applied to the educational problems of tropical and non-industrial regions.

Candidates who wish to offer Option (e) (ii) Anthropology and Sociology must obtain special permission to do so from the University when applying for approval of candidature, and must produce satisfactory evidence of their facilities for study.

(f) Theory and Practice of Teaching (Two papers)

Paper 1 : General problems of curriculum and methods of teaching including the methods and results of experimental research.

Paper 2 : More specific problems of curricula ; the teaching of a particular subject or group of subjects or teaching in educational institutions of a particular kind.

Candidates should not offer this Option unless they have had adequate practical experience.

The University normally approves only subjects which are the same as those which students have included in the Final Examination for their Degree. In addition to such subjects the University has also approved "Teaching in Secondary Modern Schools" and "Teaching in Infant and Junior Schools."

Candidates must submit details of the range of topics they propose to offer in Paper 2 when applying for approval of candidature and must obtain approval by the University.

(g) Educational Organisation and Administration (Its theory and recent history). (Two papers)

Either (i) **The United Kingdom**

The development of the educational system of England and Wales since 1902, with emphasis on the relations between central and local authority, the emergence of an integrated school system, and the problems of higher education, including the Education Act of 1944 and its implementation.

or (ii) **Tropical and non-Self-Governing Regions.**

Candidates who wish to offer Option (g) (ii) Tropical and non-Self-Governing Regions must obtain special permission to do so from the University when applying for approval of candidature, and must produce satisfactory evidence of their facilities for study.

2. The examination will be conducted mainly by means of printed papers ; but the examiners shall not be precluded from putting oral questions to any candidate in subjects in which they are appointed to examine.

3. No exemption will be granted from any subject of this examination.

4. All answers to examination questions shall be written in English unless instructions are given to the contrary.

5. While the examination is primarily a test of professional and academic knowledge, importance will be attached to the effective use of English and to indications of the general education of the candidate.

SUPPLEMENTARY SUBJECTS

Candidates who have passed the examination for the Diploma in Education may enter for examination in one or more supplementary subjects.

TIME TABLE

The examination will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. A provisional list of successful candidates, arranged in alphabetical order, will be published by the External Registrar in the course of the third week following that in which the examination concludes. A mark of distinction will be placed against the names of those candidates who show exceptional merit.

2. A copy of the Pass List will be sent to each successful candidate, and an individual notification will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the Examiners and the Pass Lists shall be laid before the Senate for approval in July.

2. A diploma under the seal of the University shall be delivered to each successful candidate.

UNIVERSITY OF LONDON



REGULATIONS FOR THE INTERMEDIATE LAWS AND LL.B. EXAMINATIONS for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with the special Regulations which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Candidates for the Degree of Bachelor of Laws as External Students are required to satisfy the minimum University and Faculty entrance requirements, to have been registered as External Students preparing for the Degree of LL.B. and to pass the Intermediate and Parts I and II of the Final Examination.

The standard of the Final Examination is that which would normally be required of a whole-time student after a course extending over three academic years after completing the minimum University and Faculty entrance requirements.

INTERMEDIATE EXAMINATION IN LAWS

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination, each candidate must (a) have satisfied the minimum University and Faculty entrance requirements, and (b) have been registered as an External Student preparing for the Degree of LL.B.

Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced a course of study. Students for the September Examination should normally apply for registration in the period October to December of the year preceding the examination, and not later than 15 July preceding the examination. **Students who apply to take the Final Examination less than three academic years from the date of registration are warned that an application for late registration with a late fee of £2 2s. will be necessary when they apply for approval of candidature for the Final Examination.**

FACULTY REQUIREMENTS

Candidates who have satisfied the minimum University entrance requirements are deemed to have satisfied the Faculty requirements for the LL.B. Degree. Candidates will, however, find a knowledge of English History useful to them and should, where possible, include this subject in their entrance qualifications.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the second Monday in September.

ENTRY TO EXAMINATION

The candidate list will be opened on 4 July. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 8 August and the candidate list will be closed on 15 August. No entry can be accepted after the candidate list has been closed.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole examination	6	6
Referred Subject	2	2
Supplementary Subject	2	2

Advanced Students :—

Complete exemption	no fee
Partial exemption, per subject	2 2

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination, and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. Conditions governing the Return of Examination Fees are printed in the General Regulations (see p. ix). In the case of the Intermediate Examination in Laws no refund of part of the entry fee can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION

1. The examination shall be a Pass Examination only, in four subjects as follows :—

1. **History and Outlines of Roman Private Law** .. 1 paper
2. **Constitutional Law** 1 paper
3. **The English Legal System** 1 paper
4. **Elements of the Law of Contract** 1 paper

2. The examination shall be conducted by means of printed papers ; but the examiners shall not be precluded from putting oral questions to any candidate.

3. Candidates shall not be approved by the examiners unless they have shown a competent knowledge in each of the four subjects.

4. All answers to examination questions shall be written in English unless instructions are given to the contrary.

5. A candidate who has passed the Intermediate Examination in Laws will not be permitted to re-enter except as provided under the Regulations for supplementary subjects.

REFERENCE

1. A candidate who enters for the whole examination on one and the same occasion, but who fails to reach the required standard in one subject only, may be referred, i.e., he may be permitted to re-present himself for examination in that subject alone at one or more subsequent Intermediate Examinations in Laws.

2. The examiners will recommend that a candidate be referred only if his failure in one subject is not serious, and if his performance in the remaining three subjects is reasonably good.

3. A candidate who has completed the Intermediate Examination after having been referred in one subject will be deemed for all purposes to have passed the examination in question on the date of completion.

4. A candidate who has been referred at Intermediate Laws, and who elects to take his referred subject concurrently with Part I of the Final Examination, will be required to take this subject at the Special Internal Intermediate Examination in Laws, which takes place at the beginning of June. Entry must be made concurrently with entry for Part I of the Final.

SUPPLEMENTARY SUBJECT

A candidate who has passed Intermediate Laws under the Old Regulations, i.e., with Criminal Law instead of Elements of the Law of Contract, may be permitted to offer Elements of the Law of Contract as a supplementary subject.

EXEMPTIONS

1. Candidates who have passed the B.A. General Examination of this University with Constitutional Laws of the British Empire will be exempted from examination in Constitutional Law.

2. Candidates who have passed the B.A. General Examination of this University with General Principles of English Law will be exempted from examination in Elements of the Law of Contract.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 26 October the External Registrar shall publish a list of the successful candidates arranged in alphabetical order.

2. A copy of this Pass List will be sent to each successful candidate, and an individual notification will be sent to each unsuccessful candidate.

3. The report of the examiners and the Pass Lists shall be laid before the Senate for approval in November.

4. Certificates of having passed the examination will not be issued except to qualified students applying for such certificates.

5. Each successful candidate will receive a Detailed Report on his results in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass.

6. Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—

D—Failure ; E—Bad Failure.

7. Detailed Result Reports will be sent to successful candidates from one to two months after the publication of the ordinary Pass List, but will be sent to unsuccessful candidates at the time when they are notified of the result of the examination.

8. Educational institutions in receipt of annual grants from public funds may apply for a statement of the detailed results of their candidates ; such applications must be accompanied by a list of the candidates' names, the name of the examination and the date at which it was taken. The results cannot be communicated until about two months after the publication of the Pass List and each institution will have communicated to it the results of those candidates only who are registered as pursuing a course of study at that institution.

SYLLABUSES

The editions recommended are the latest available at the date of publication of these regulations. Candidates are advised in all cases to use only the latest edition available.

History and Outlines of Roman Private Law

The outline of Roman Legal History and the elementary principles of Roman Law.

- (a) Sources. (Roman Constitutional History only in so far as it is relevant to the sources.)
- (b) The general influence of Roman Law on Western European and the English legal systems.
- (c) *Jus civile*, *Jus gentium* and *jus naturale*.
- (d) The Law of Actions. Students will be expected to understand thoroughly the principles of the formulary system and to appreciate the changes involved in its introduction and in the introduction of the *cognitio extraordinaria*. The *legis actiones* and the *cognitio extraordinaria* in outline only.
- (e) The Law of Property. Ownership and possession. Acquisition and loss of ownership and possession. Remedies for the protection of ownership and possession. *Jura in re aliena*, with emphasis on the nature and characteristics of praedial servitudes, and on usufruct, *emphyteusis* and real security.
- (f) The Law of Obligations.
 - (i) Contracts, pacts and innominate contracts, excluding the details of novation, assignments, plurality of parties, extinction of obligations, and the old literal contract.
 - (ii) Agency. Quasi-contract. Personal security.
 - (iii) Delicts. (Delicts other than the four principal delicts in outline only.)
 - (iv) Quasi-delict. Noxal liability. Liability for animals.
- (g) Family Law.
 - (i) The Roman family. The nature of agnatic relationship and the reasons why it gave way to cognatic relationship for legal purposes.
 - (ii) Marriage and divorce. Concubinage.
 - (iii) Marriage gifts (*dos*, *donatio*), in so far as they are relevant to show the property relations between husband and wife and the Roman attitude towards marriage and divorce.
 - (iv) Status of children. Legitimation.
 - (v) Adoption and adrogation. Emancipation.
 - (vi) *Tutela* and *cura* (excluding tutela of women).
 - (vii) Status and capacity of slaves.
 - (viii) Extent to which the legal capacity of a person in the Roman Empire was affected by his age, his nationality or his subjection to *potestas*. (N.B. The following topics are excluded : ceremonies and forms, modes of acquiring and losing *civitas* and *libertas* ; *capitis deminutio* ; the legal status of *Latini*, *dediticii*, persons in *mancipio*, *libertini*, *coloni adscriptitii* and *intestabiles*.)

Candidates will be expected to make some general elementary comparisons with those aspects of English Law which are contained in the Syllabuses for the English Legal System and Elements of the Law of Contract.

No passages for translation from Latin will be set, but Latin technical terms will be used.

BOOKS RECOMMENDED

Main Text-books :—

- (1) R. W. Lee : *The Elements of Roman Law* (3rd edition, 1952)
and/or

W. W. Buckland : *A Manual of Roman Private Law* (2nd edition, 1949).

- (2) H. F. Jolowicz : *Historical Introduction to the Study of Roman Law* (2nd edition, 1952).

and/or

H. J. Wolff : *Roman Law—an Historical Introduction*.

- (3) R. W. Lee : *An Historical Conspectus of Roman Law*.

Further Reading and Reference :—

F. Schulz : *Principles of Roman Law*.

W. W. Buckland and A. D. McNair : *Roman Law and Common Law* (2nd edition, 1952 by F. H. Lawson).

W. W. Buckland : *A Textbook of Roman Law from Augustus to Justinian*.

F. Schulz : *Classical Roman Law*.

R. Monier : *Manuel élémentaire de droit romain*, 2 vols. (4th edition, 1947-8).

Constitutional Law

The nature of constitutional law—sources and characteristics of English constitutional law—separation of powers—the supremacy of Parliament—constitutional conventions.

Parliament, its meeting, composition, functions, powers and procedure—control of national finance—parliamentary privilege.

The Executive—the monarchy—royal prerogative—the Privy Council—Cabinet government—the position of the Prime Minister—ministerial responsibility—the Crown and foreign relations.

The constitutional position of the Judiciary—administrative law in England—types of governmental powers—remedies against public authorities—the Crown in litigation—delegated legislation—the rule of law.

The citizen and the State—liberties of the subject—emergency powers—military and martial law.

The British Commonwealth—the main forms of constitutional development and structure within the Commonwealth—relations of Commonwealth countries with the Crown and the United Kingdom—allegiance and citizenship in the Commonwealth—the Judicial Committee of the Privy Council.

BOOKS RECOMMENDED

Wade and Phillips : *Constitutional Law* (4th edition 1950) ; or
Hood Phillips : *Constitutional Law of Great Britain and the Commonwealth* (1952).

Keir and Lawson : *Cases in Constitutional Law* (3rd edition) ;
or Hood Phillips : *Cases in Constitutional Law* (1952).

For further reading :—

Dicey : *Law of the Constitution* (9th edition 1939).

Jennings : *The Law and the Constitution* (4th edition, 1952).

Denning : *Freedom under the Law*.

For further reference :—

- Anson : *Law and Custom of the Constitution* (Volume I, 5th edition, 1922 ; Volume II, 4th edition, 1935).
 Jennings : *Cabinet Government* (2nd edition, 1951).
 Jennings : *Parliament*.
 Griffith and Street : *Principles of Administrative Law* (1952).
 Jennings and Young : *Constitutional Laws of the Commonwealth* (2nd edition, 1952).

The English Legal System

The major divisions of English Law, with particular reference to the distinctions between Contract, Tort, Crime and Property.

The origins of the Common Law. The different senses of the term "Common Law". The emergence of the distinction between civil and criminal law. Terminology relating to civil and criminal proceedings.

A general outline of the Forms of Action and the development of the Law of Tort and the Law of Contract, illustrated by particular reference to the actions of Trespass, Negligence, Defamation and Assumpsit.

The development of the system of Equity and the effect of the Judicature Acts. The development of legislation as a form of law. The influence of Roman Law and Canon Law, and the Law Merchant, and the influence of Text-book writers.

The operation of statutes and subordinate legislation. Case law. The doctrine of Precedent. Law Reports. The judicial function.

The Law Reform Committee.

The constitutions and jurisdiction of the civil and criminal courts, including appellate courts. Administrative tribunals and arbitrations distinguished from the ordinary courts. The judges and justices of the peace. The jury system. The legal profession and the relationship between barristers and solicitors. Court officers and officials, the police, and probation officers.

Characteristics of procedure in English courts. A descriptive outline of a criminal proceeding, from apprehension to punishment. Types of sentence. Indictable and summary proceedings. Election to be tried summarily. Bail. Juvenile court procedure. A descriptive outline of a civil proceeding from issue of process to execution of judgment. Contrasts between High Court and County Court proceedings. Contrast between contentions and inquisitorial procedure. Characteristics of the English Law of evidence. General nature of relevance and the burden of proof and the best evidence and hearsay rules. Written pleadings and oral hearing. The relaxation of the rules of evidence in civil cases. Litigation and legal aid. Costs of litigation, including appeals. The Legal Aid scheme as at present in operation and when fully implemented.

Legal persons. The distinction between natural and artificial persons and the general problem of incapacity.

BOOKS RECOMMENDED

(a) Preliminary Reading :

- G. Williams : *Learning the Law*.
 Geldhart : *Elements of English Law*.

(b) Text-books :—

- Hood Phillips : *First Book of English Law*, (2nd edition) ;
 Jackson : *Machinery of Justice in England* ;
 Stephen's *Commentaries, Chapters on Courts, Sources, Civil and Criminal Procedure*.

(c) *Further Reading and for Reference :—*

Potter's *Historical Introduction to English Law* (3rd edition) ;
 Plucknett : *Concise History of the Common Law* ;
 Maitland and Montague : *Sketch of English Legal History* ;
 Maitland's *Forms of Action at the Common Law* ;
 Stephen's *Commentaries*, vols. III and IV (Crimes and Torts) ;
 Radcliffe and Cross : *The English Legal System* ;
 Rubinstein : *John Citizen and the Law* ;
 Law Society's *Handbook on Legal Aid* ;
 Dicey : *Law and Opinion in England in the Nineteenth Century*.

Elements of the Law of Contract

The nature of contract. The formation of contracts. Form and consideration. Capacity of parties. Reality of consent. Legality of object. Privity of contract (excluding assignment and agency). Discharge of contracts. Remedies for breach. (Quasi-contract is excluded).

BOOKS RECOMMENDED

Text-books :—

Cheshire and Fifoot : *Law of Contract* (3rd edition) ;
 Anson : *Law of Contract* (20th edition) ;
 Salmond and Williams : *Law of Contracts* (2nd edition).

Further reading :—

Pollock : *Principles of Contract* (13th edition) ;
 Chitty : *Contracts* (20th edition).

LL.B. EXAMINATION

1. The LL.B. Degree will be awarded to candidates who are successful in the Final Examination in eight subjects. Successful candidates will receive First Class Honours, Second Class Honours, or a Pass Degree.

2. Candidates who have obtained the LL.B. Degree whether Pass or Honours are not permitted in any circumstances to re-enter for the examination with a view to improving their class.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to Part I of the examination each candidate must (a) have been registered as an External Student preparing for the Degree of LL.B., (b) have completed the Intermediate Examination in Laws not less than one academic year earlier, and (c) have obtained approval of candidature for Parts I and II of the LL.B. Examination as an External Student.

2. A candidate who has been referred at Intermediate Laws may take his referred subject concurrently with Part I of the Final Examination, but if he fails in his referred subject, no report shall be made on his performance in Part I of the Final Examination.

3. A candidate who has been referred at Intermediate Laws, and who elects to take his referred subject concurrently with Part I of the Final Examination, will be required to take this subject at the Special Internal Intermediate Examination in Laws which takes place at the beginning of June. Entry must be made concurrently with entry for Part I of the Final.

4. To be admitted to Part II each candidate must (a) have been registered as an External Student preparing for the Degree of LL.B. not less than three academic years earlier, (b) have completed Part I not less than one academic year earlier, and (c) have obtained approval of candidature for the LL.B. Examination as an External Student. Nevertheless the Council for External Students may in exceptional circumstances permit a candidate to take both Parts of the examination on the same occasion (such permission will not be granted to candidates who have failed Part I).

5. Candidates who have been referred in Part I, however, are permitted to take their referred subject on one occasion only with Part II at one of the next two Final Examinations.

6. A candidate who has passed Intermediate Laws with Criminal Law is required to take the Final Syllabus as it stands, i.e., to take Criminal Law again in the Final.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the second Monday in June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the LL.B. Examination during the period October-November of the year preceding the year in which Part I is to be taken, and not later than 1 December. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 1 December, application may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate lists for the two Parts will be opened on 21 December of the preceding year. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 January and the candidate lists will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole examination	6	6
One Part only	3	3
Referred Subject	2	2
Each Supplementary Subject	2	2

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination, and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank, Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees. (See General Regulations p. ix.)

SCHEME OF EXAMINATION

1. The examination is divided into two parts and normally candidates must pass Part I before they enter for Part II.

2. The Council for External Students may in exceptional circumstances permit candidates to take both Parts of the examination on the same occasion. Such permission will not be granted to candidates who have failed Part I. Further, candidates referred in one subject in Part I may take this referred subject on one occasion only with Part II at one of the next two Final Examinations. A candidate who obtains permission to take both Parts on the same occasion and who passes in Part I and fails in Part II shall be credited with having passed Part I, but a candidate who fails or is referred in Part I shall have no report made upon his work in Part II.

3. All candidates must offer and pass in the four subjects of Part I of the examination and in four subjects of Part II.

Part I

[Four papers.]

Candidates will be examined in the following (one 3-hour paper in each subject taken) :—

- (1) **Criminal Law or Indian Criminal Law.**
- (2) **Law of Tort.**
- (3) **Law of Trusts.**
- (4) **One of the following :—**
 - (a) English Land Law.
 - (b) Principles of the Law of Evidence.
 - (c) English Administrative Law.
 - (d) Muhammadan Law.
 - (e) Hindu Law.

Part II

[Four papers.]

- (5) **Jurisprudence and Legal Theory** (one 3-hour paper) and **three** of the following (one 3-hour paper in each subject taken) :—
- (6) English Land Law (if not taken at Part I).
- (7) Principles of the Law of Evidence (if not taken at Part I).
- (8) English Administrative Law (if not taken at Part I).
- (9) Muhammadan Law (if not taken at Part I).
- (10) Hindu Law (if not taken at Part I).
- (11) Roman Law.
- (12) History of English Law.
- (13) Public International Law.
- (14) Conflict of Laws.
- (15) Conveyancing.
- (16) Succession, Testate and Intestate.
- (17) Mercantile Law.
- (18) Industrial Law.
- (19) Law of Domestic Relations.

4. The examination shall be conducted by means of printed papers ; in cases of doubt the examiners may in addition examine any candidate orally.

5. The marks obtained in Part I of the examination will be combined with those obtained in Part II for the purpose of the classification for Honours.

6. In each subject a reasonable choice of questions shall be allowed.

7. There are no exemptions from either Part of this examination.

8. All answers to examination questions shall be written in English unless instructions are given to the contrary.

REFERENCE

1. A candidate at Part I who fails to reach the minimum standard in any one subject only may be referred, i.e., he may be permitted on the recommendation of the examiners to present himself on one occasion only in that subject, with Part II, at one of the next two Final Examinations.

2. A candidate who fails in his referred subject will be required on re-entering to offer the whole of Part I again, and will have no report made on Part II.

3. The examiners will recommend that the candidate be referred only if his failure in the subject is not serious, and if his performance in the remaining subjects is reasonably good.

SUPPLEMENTARY SUBJECTS

Candidates who have passed the LL.B. Examination are admissible for examination in one or more supplementary subjects.

TIME TABLE

The examination will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 13 August the External Registrar shall publish a list of the successful candidates at the examination, arranged in alphabetical order in each of the five categories, First Class Honours, Second Class Honours (Upper Division), Second Class Honours (Lower Division), Pass, and Part I.

2. A copy of the Pass List will be sent to each successful candidate and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) The following classes of candidates at the LL.B. Examination are eligible to apply for an Aegrotat Degree :—

- (a) Candidates who have already passed Part I of the examination and who have completed at least half of Part II of the examination.
- (b) Candidates who have entered concurrently for both Parts of the examination and who have completed more than half of the entire examination.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of LL.B. under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SCHOLARSHIP IN LAWS

1. A Scholarship of the value of £50 a year, tenable for two years, will be offered annually to candidates at the LL.B. Examination for Internal and External Students, for part-time post-graduate work.

2. Application for the Scholarship must be made on the candidate's entry form.

3. The names of two persons, to whom reference can be made, must be given. Where possible, one of the referees should be the Head of the Law School in which the student is working.

4. The award will be made by the Scholarships Committee on the recommendation of the Board of Examiners in Laws for the LL.B. Examination, who may invite the assistance of one or more experts as assessors in subjects otherwise not represented on the Board. The Board shall not be precluded from recommending a candidate who has not applied.

5. Selected candidates may be required to attend for interview with the Board. Expenses incurred in attending the interview will not be refunded by the University.

6. The selected student must satisfy the University of his intention to pursue a part-time course of advanced study or research and will be required to present, during the tenure of the Scholarship, such reports upon the progress of his studies as the University may from time to time determine.

7. The holder of the Scholarship will normally be required to carry out his post-graduate studies in a School or Institution of the University. The Scholarship will be tenable from the beginning of the University Session following the award.

8. If for any reason a Scholarship is not awarded in any year, an additional Scholarship may, at the discretion of the Committee, be awarded in a subsequent year.

SYLLABUSES

Candidates are advised to read articles on topics within their courses of study, which appear in recent issues of *The Law Quarterly Review*, *The Modern Law Review*, and *The Cambridge Law Journal*.

The editions recommended are the latest available at the date of publication of these regulations. Candidates are advised in all cases to use only the latest edition available.

PART I

Criminal Law

The classification of crimes and the different modes of procedure. A description of the Courts of Criminal Jurisdiction. The general nature of a crime. The general principles of responsibility and of exemptions from responsibility. The degrees of participation in crime. Inchoate crimes.

Offences against the Person.—Murder, manslaughter, infanticide, child destruction, suicide. Wounding with intent, unlawful wounding, assaults.

Offences against Property.—Legal theories of ownership, possession, and custody. Burglary, housebreaking, sacrilege, larceny, robbery, embezzlement, conversion, obtaining credit by fraud, false pretences, receiving, demanding with menaces, forgery, falsification, cheating, restitution of property. Arson, malicious damage.

Offences against the King and Government, Public Justice, Public Peace and Morals, and Trade.—Treason, sedition, riot, rout, unlawful assemblies, perjury, libel, bigamy, conspiracy and industrial disputes, public mischief.

BOOKS RECOMMENDED

Kenny : *Outlines of Criminal Law* (16th edition, J. W. C. Turner—omitting the parts concerning Procedure and Evidence).

Cross and Jones : *Introduction to Criminal Law* (2nd edition, —omitting parts concerning Procedure).

Various Authors (pub. Macmillan) : *The Modern Approach to Criminal Law*.

Turner and Armitage : *Cases on Criminal Law*.

Cross and Jones : *Cases on Criminal Law*.

Further Reading :—

Stephen's Digest of the Criminal Law (9th edition, L. F. Sturge).

W. O. Russell : *Crime* (10th edition, J. W. C. Turner).

Indian Criminal Law

The examination will be confined to general principles and to the following portions of the Indian Penal Code, from which, however, all sections which merely prescribe penalties without affecting the definitions of offences may be omitted :—

Sections 2, 3, 4, 6–52, 76–120-B, 141–159, 191, 192, 295–464 and 511.

In order to meet the needs of candidates who are studying the English concurrently with the Indian law, stress will be laid on questions involving a comparison of the two laws and the general theories of criminal laws, such as :—

The general nature of a crime.

The general principles of responsibility and of exemptions from responsibility.

The degrees of participation in crime.

Inchoate crimes.

Legal theories of ownership, possession and custody.

The official text of the Penal Code, published by Government, is to be used as a text-book. The Student's Edition of the *Indian Code* by Ratanlal and Dhirajlal Thakore may also be used, and the larger edition by the same authors and Mayne's *Criminal Law of India* are valuable for comparative and theoretical study.

Law of Tort

Nature of Tort. Forms of action of the law of tort. General principles of liability including general defences to an action of tort. Parties to a tort (excluding the State). Effect of death in relation to tort. Joint tortfeasors. Remedies (damages, injunctions and specific restitution). Injuries to the person, including trespass, assault and battery, false imprisonment and intentional physical harm. Defamation, slander of title and malicious words. Trespass to land and cognate torts. Nuisance

(public and private) and cognate torts, including injuries to reversioners but excluding injuries to servitudes. Trespass to goods, detinue and conversion. Rule in *Rylands v. Fletcher* and liability for animals. Liability for dangerous operations, chattels and premises. Negligence and liability under statutory powers and duties. Inducement of breach of contract, intimidation and conspiracy.

BOOKS RECOMMENDED

Salmond : *Torts* (11th edition).

Winfield : *Text-book of the Law of Tort* (5th edition).

Winfield : *Cases on the Law of Tort* (4th edition).

Pollock : *Torts* (15th edition).

Blackburn and George : *Law of Torts*.

Potter : *Principles of Liability in Tort* (1948).

Further Reading :—

Clerk and Lindsell : *Torts* (10th edition).

Winfield : *Province of the Law of Tort*.

Digest of English Civil Law (3rd edition).

Law of Trusts

The general nature of equitable principles and remedies. The doctrines of conversion and reconversion. Election, satisfaction, performance and ademption, equitable and legal assignments and priorities.

The general principles of the Law of Trusts, including implied, resulting and constructive trusts, and charitable trusts.

Powers and duties of trustees. The administration of a trust. Breach of trust, and remedies therefor.

BOOKS RECOMMENDED

Text-books :—

Keeton : *An Introduction to Equity* (3rd edition).

Keeton : *The Law of Trusts* (5th edition).

Further Reading :—

Hanbury : *Modern Equity* (6th edition).

Hanbury : *Essays in Equity*.

Ashburner : *Equity* (2nd edition).

Maitland : *Equity* (edited by Brunyate, 2nd edition, 1949).

White and Tudor : *Leading Cases in Equity* (9th ed.), 2 vols.

Nathan : *Equity through the Cases* (2nd edition).

English Land Law

The general principles of English Land Law under the systems of registered and unregistered titles, including the following matters :—

Legal estates and interests, including the powers of disposition of estate owners, but including the Law of landlord and tenant in outline only. The general law of covenants running with the land at Law or in equity. The nature of equitable interests generally and interests capable of subsisting under Settlements and dispositions on trust for sale. Interests in possession and in expectancy and powers. Concurrent

interests in land. The nature of mortgages and charges and the rules governing priority of incumbrances, and the provisions for protecting or realizing the security, in outline only.

The nature and extent of interests capable of registration and of overriding interests, and the nature of minor interests and the character of indefeasibility of title under the Land Registration Act, 1925. Comparison between the position of estates and interests under the systems of registered and unregistered titles.

Candidates will be expected to be familiar with the principles in force under the system of unregistered titles prior to 1926.

General outline of the restrictions on land use under the Town and Country Planning Act, 1947, and Agriculture Act, 1947, and of development charge and supervision and dispossession Orders.

BOOKS RECOMMENDED

Text-books :—

Cheshire : *Modern Law of Real Property* (6th edition).

Goodeve and Potter : *Real Property*.

Potter : *Principles of Land Law under the Land Registration Act, 1925*.

Megarry : *Manual of the Law of Real Property*.

Further Reading :—

Williams : *Real Property* (25th edition).

Challis : *Real Property* (3rd edition).

Rivington : *Law of Property in Land* (4th edition).

Wolstenholme and Cherry's *Conveyancing Statutes* (12th edition).

Hood and Challis' *Property Acts* (8th edition).

Hargreaves : *Introduction to the Principles of Land Law* (3rd edition).

[*Note.*—The text-books dealing with the unregistered system contain a great deal that is not within this syllabus and can be omitted on reading.]

Candidates are reminded that notes and articles of interest to the student appear in the *Conveyancer* and the *Law Quarterly Review*.

Principles of the Law of Evidence

General.—Nature and classification of judicial evidence. Basic principles of evidence. Development of rules of evidence.

Admissibility of Evidence.—Its relation to relevance. *Res gestae*. Relevant facts. Similar facts. Character and convictions. Opinion. Privilege. Estoppel. Hearsay, and its exceptions.

Means of Proof.—Oral evidence—scope ; attendance of witnesses ; competence and compellability ; oaths and their substitutes ; examination in court and elsewhere. Documentary evidence—nature of public, judicial and private documents ; proof of contents of public and judicial documents. Production and proof of private documents ; primary and secondary evidence ; extrinsic evidence ; stamping. Real evidence—scope ; inspection out of court. Other means of establishing facts.

Assessment of Evidence.—Functions of Judge and jury. Burden of proof—meaning and incidence ; standards of proof. Presumptions—nature, classification and effect. Cogency. Corroboration.

(A knowledge of statutory provisions on minor points is not required, nor are candidates required to be familiar with the Indian Evidence Act.)

BOOKS RECOMMENDED

Text-books :—

Wills : *On the Law of Evidence* (3rd edition).

Phipson : *Manual of the Law of Evidence* (7th edition).

Cockle : *Cases and Statutes on the Law of Evidence* (8th edition).

Stephen : *Digest of the Law of Evidence* (12th edition).

Nokes : *Introduction to Evidence*.

For Reference :—

Best : *Principles of the Law of Evidence* (12th edition).

Powell : *Principles and Practice of the Law of Evidence* (10th edition).

Stephen : *Introduction to the Indian Evidence Act* (various editions).

Phipson : *Law of Evidence* (9th edition).

Wills : *Principles of Circumstantial Evidence* (7th edition).

Thayer : *Preliminary Treatise on Evidence*.

Wigmore : *Treatise on the Anglo-American System of Evidence* (3rd edition).

Articles in recent volumes of the *Law Quarterly Review* the *Cambridge Law Journal* and the *Modern Law Review*.

English Administrative Law

The subject-matter is the law of public administration. It comprises the law and practice governing the organization, personnel, powers, functions, rights, obligations and responsibilities of public authorities ; and also the methods by which they are controlled. The sources of such law and practice include, in addition to the prerogative, legislation and case law, the orders, regulations and decisions of governmental authorities.

The nature of administrative law. The separation of powers. Comparison with *droit administratif*.

The powers of the administration (central and local). (a) Legislative powers. Parliamentary Bills. Delegated legislation. Prerogative. The use of royal commissions. (b) Judicial powers of ministers and administrative tribunals. (c) Executive powers.

The control over administration. (a) Parliamentary control, including debates and questions. Direct and indirect influence. Select Committees. (b) Judicial review. Writs. The doctrine of *ultra vires*. Appeals from tribunals. Administrative discretion. Liability of the Crown, administrative authorities and officials. (c) Advisory Committees.

Cabinet government. Cabinet Committees. The Cabinet Secretariat. The position of the Treasury.

Government departments. Their internal organization. A general view of the distribution of functions. Relation between departments. The civil service.

Local government. Its structure. The internal organization of local authorities, with special reference to the committee system. Powers. Joint action. Local government officers.

The relationship between central and local government. Grants in aid. Loans. Default powers. Audit. Other forms of central control.

Independent bodies of an *ad hoc* character (public utilities). Commissions and boards. Public corporations.

BOOKS RECOMMENDED

1. *Text-books* :—

- Robson : *Justice and Administrative Law* (3rd edition).
 Griffith and Street : *Principles of Administrative Law*.
 Williams, G. L. : *Crown Proceedings*.
 Hart : *Introduction to Law of Local Government and Administration* (5th edition.).

2. *Reference Books* :—

- Carr : *Concerning English Administrative Law*.
 Allen : *Law and Orders*.
 Report of Committee on Ministers' Powers (Cmd. 4060, 1932).
 Campion and others : *British Government since 1918*.
 Amery : *Thoughts on the Constitution*.
 Denning : *Freedom under the Law*.
 Chester : *The Nationalised Industries* (2nd edition).
 Jennings : *Parliament*.
 Jennings : *Cabinet Government*.
 Jennings : *Principles of Local Government Law*.
 Robson : *Development of Local Government*.
 Robinson : *Public Authorities and Legal Liability*.

3. *Articles* :—

Students are recommended to read relevant articles in :—*Modern Law Review*, *Law Quarterly Review* and *Cambridge Law Journal* ; articles of interest also appear in *Political Quarterly* and *Public Administration*. Occasionally articles on English Administrative Law also appear in *Canadian Bar Review*, *Australian Law Journal* and publications of the Universities of the United States of America (*esp.* Harvard, Yale, Columbia and Michigan).

Muhammadian Law

Muhammadian Jurisprudence. The origin, history and development of the law and of its different schools and the present-day distribution of the schools throughout the world. The law relating to marriage, including dower, *iddat*, and divorce. The doctrine of acknowledgment and its various applications. Guardianship. Maintenance. Succession, including (a) administration, (b) legacies, and (c) inheritance. The doctrine of death sickness. Gifts, waqf and pre-emption.

The examination will be mainly on the law as enforced in India—that is to say, a knowledge of Hanafi and Shia Law and of Indian judicial and statutory modifications will be principally required. But opportunities will also be given for candidates to show a knowledge of the law on the subjects above-mentioned, in force elsewhere in the British Empire, its dependencies and mandated territories as well as Egypt and Iraq, including the law of other schools prevalent therein.

In the law of inheritance candidates will be required to show a grasp of the principles involved, but problems to illustrate those principles will be chosen from cases which might readily occur in everyday life and, so far as possible, arithmetical complexities will be avoided.

BOOKS RECOMMENDED

- Mulla : *Mahomedan Law* (11th edition, by Sir Geo. Rankin, or later edition).

FitzGerald : *Muhammadian Law*.

Fyzee : *Outlines of Muhammedan Law* (O.U.P.).

General Introductory Reading :—

Macdonald : *Muslim Theology* (first 117 pages).

Arnold : *The Islamic Faith*.

Snouck Hurgronje : *Muhammadianism*.

Wilson : *Historical Introduction to Anglo-Muhammadian Law*.

Further Reading :—

Wilson : *Digest of Anglo-Muhammadian Law* (6th edition).

Saksena : *Muslim Law in British India* (1937).

Ameer Ali : *Mahommedan Law* (4th or later edition).

Hamilton : *Hedaya*.

Baillie : *Digest* (Haneefeeya) and *Code* (Imameeya).

Useful articles and notes occasionally appear in the *Journal of Comparative Legislation*.

Hindu Law

The persons to whom, and the cases in which, the Hindu Law is applicable. Statutory limitations on its application. Sources. History and development. Custom and its relation with the literary law. Changes of personal law. Jurisdiction of the Courts in matters of caste. The different schools of Hindu law and their rules concerning marriage ; adoption ; the joint family and the rights and duties of its members ; maintenance ; partition ; guardianship and minority ; inheritance and survivorship ; wills ; the estate taken by female heirs ; stridhan ; Hindu idols and endowments ; impartible estates.

Of the law of stridhan candidates will only be required to know general principles, and not detail. They will not be required to know the law of dam dupat. Of the law of inheritance to males they will be required to know the principles in outline, but problems set will be simple in character and such as might easily arise in everyday life. The order of precedence of the various heirs as printed in Trevelyan, Mulla and other writers may be omitted.

The Hindu Law Code at present before the Legislature will not be a compulsory subject of examination until a sufficient time has passed from the date on which it becomes law to enable students to study it thoroughly ; but meanwhile, credit will be given for a knowledge of its provisions.

BOOKS RECOMMENDED

Text-books :—

Raghavachariar : *Hindu Law, Principles and Precedents* (3rd edition, 1947, M.L.J. Office, Mylapore, Madras).

Vaidya : *Elements of Hindu Law*.

Further Reading :—

Mayne : *Hindu Law and Usage* (10th or 11th edition).

Higginbotham's *Madras*, obtainable from Cartwright, Wallace & Co., Waterloo Place.

Colebrooke's, *Initakshara and Dayabhaja*.

Any of the big practitioners' books by Mulla, Gupta, Gour, Trevelyan and others may be useful for reference but in general they are too detailed for students.

Useful articles and notes occasionally appear in the *Journal of Comparative Legislation* and in the *Indian Law Review*.

PART II

Jurisprudence and Legal Theory

I. *Legal Theory* :—Theories of the nature and basis of law ; the law of nature ; natural rights ; legal " realism " ; law and ethics ; utilitarianism ; equity. Economic interpretations of legal history ; *laissez faire* and collectivism ; individual and social interests.

II. *Sources and Forms of Law* :—Critical study of the English rules of custom, precedent, and legislation, together with the interpretation of statutes. The declaratory theory of precedent. The relative merits of codification and case-law.

III. *Analysis of Concepts* :—Analysis of the main concepts used in law, including in particular Right in its various senses ; Duty ; Personality ; Property ; Possession.

BOOKS RECOMMENDED

Text-books :—

Salmond : *Jurisprudence* (10th ed.).

Keeton : *Elementary Principles of Jurisprudence* (2nd ed.).
or Paton : *Jurisprudence* (2nd ed.).

Allen : *Law in the Making* (5th ed.).

Pound : *Interpretations of Legal History*.

Further Reading :—

Cardozo : *Nature of the Judicial Process*.

Holmes : *The Common Law*, Ch. 6 (Possession), and *Collected Legal Papers* 167 ff. (The Path of the Law).

Maitland : *Selected Essays*.

Goodhart : *Essays in Jurisprudence and the Common Law*, chh. 1, 4.

Modern Theories of Law (ed. Jennings), chh. 1, 7, 9, 10.

Friedman : *Legal Theory* (2nd ed.).

Pollock : *Essays in the Law*, ch. 2 (History of the Law of Nature).

Hohfeld : *Fundamental Legal Conceptions*.

Llewellyn : *The Bramble Bush*.

Olivecrona : *Law as Fact*.

Lauterpacht : *International Law and Human Rights*.

Odgers : *The Interpretation of Deeds and Statutes*, 2nd ed., Pt. II.

Frank : *Law and the Modern Mind*.

Roman Law

Questions (including passages for translation and comment from the special portion of the Digest) will be set on the special subject prescribed, but candidates will be expected to show a sufficient elementary knowledge of the general principles of Roman private law where matters falling outside the special subject are involved.

Questions may also be set relating to the history and composition of the Digest.

Special Subject for 1954, 1955 and provisionally for 1956 :—

Locatio, Conductio : Digest, Book XIX, Title 2.

BOOKS RECOMMENDED

For elementary principles of Roman Private Law :—

W. W. Buckland : *Manual of Roman Private Law*.

For history and composition of the Digest :—

W. W. Buckland : *Text-book of Roman Law* (2nd edition, 1932), pp. 39-47.

H. F. Jolowicz : *Historical Introduction to the Study of Roman Private Law*, (2nd edition) Chapter XXVIII, especially pp. 486-498.

For Damage to Property and Digest, Book IX, Title 2 :—

F. H. Lawson : *Negligence in the Civil Law*.

C. H. Monro : *Digest IX 2. Lex Aquilia*.

E. Grueber : *The Roman Law of Damage to Property*.

F. P. Van den Heever : *Aquilian Damages in South African Law*, Volume I.

James B. Thayer : *Lex Aquilia*.

W. W. Buckland : *Text-book of Roman Law* (2nd edition, 1932), pp. 585-589.

R. Monier : *Manuel Élémentaire de Droit Romain* (4th edition, 1948), Vol. II, pp. 55-62.

For Locatio, Conductio : Digest, Book XIX, Title 2 :—

C. H. Monro : *Digest XIX 2 Locati, Conducti*.

W. W. Buckland : *Text-book of Roman Law* (2nd edition, 1932, reprinted 1950), pp. 498-506.

R. Monier : *Manuel Élémentaire de Droit Romain* (4th edition, 1948), Vol. II, pp. 168-176.

History of English Law

The principal sources of English legal history, their characteristics and significance (Anglo-Saxon laws, charters, public records, year books, reports, abridgements, treatises).

Legal institutions (communal, seignorial, mercantile and royal courts, of prerogative and equity, their development and jurisdiction).

Factors in the development of English law (legislation and its treatment by the courts, the growth of the principle of precedent, the influence of Roman and Canon Law, the history of the legal profession and of the judiciary, the influence of great lawyers—e.g., Coke, Bacon, Nottingham, Holt, Mansfield).

Procedure (in the Anglo-Saxon period, the original writ, scope and development of the principal forms of action, the modes of proof, the

history of the jury, witnesses, modes of execution, the review of verdicts and judgments).

Criminal law (appeals, indictments, informations, benefit of clergy, sanctuary, the felonies, the separation of misdemeanours and tort).

Real property (feudalism and tenures, the rise of the entail, estates for life, dower, curtesy, terms of years, the rise of uses and trusts, future interests, mortgages, the origin and effect of conveyances in outline only, excluding the history of the law of wills).

Personal property (ownership, possession, bailment).

Contract (real, formal and consensual ; assumpsit ; consideration).

Tort (relation to crime, liability, the nature of trespass and case, conversion, deceit, defamation).

Equity (history and nature of the jurisdiction, its relation to common law).

[*Note.*—The examination will not require the history of constitutional law, legislative procedure, international, ecclesiastical or mercantile law, but will place emphasis upon a sound understanding of the general development of the topics comprised in the above syllabus. Questions will not be set on the legal history of the period after 1832.]

BOOKS RECOMMENDED

Text-books :—

Plucknett, *Concise History of the Common Law* (3rd edition), Maitland, *Forms of Action*, and Potter, *Historical Introduction to English Law and its Institutions* (2nd edition), are text-books which cover most of the syllabus. Sources are treated in Holdsworth, *Sources and Literature of English Law*.

Further Reading :—

Winfield, *Chief Sources of English Legal History*, Holdsworth, *History of English Law*, is a large-scale work to which occasional reference may be made especially for foreign influences, general development of the law, the profession and the judges. Pollock and Maitland, *History of English Law* (2nd edition), is a classic work the more general portions of which should be read by candidates who seek high honours ; so, too, the relevant portions of Ames, *Lectures in Legal History*. Thayer, *Preliminary Treatise on Evidence*, first five chapters only.

C. H. S. Fifoot : *History and Sources of the Common Law—Contract and Tort*.

All candidates should study Maitland, *Forms of Action*, and remember that recent volumes of the *Law Quarterly Review* often contain articles on legal history of a general character which bear upon the matters contained in the syllabus.

Public International Law

A. General Principles

1. *The Foundations of International Law* :—International Law and Society. The Sources of International Law. International and Municipal Law. The Dominion of International Law. Development and Science of International Law.

2. *International Personality* :—The Subjects of International Law. The Principles of Sovereignty and State Equality. Recognition. Representation of States. International Persons Other than States. Continuity of States and State Succession.

3. *State Jurisdiction* :—General principles. Territorial Jurisdiction. Limitation of Territorial Jurisdiction under International Customary and Conventional Law. Personal Jurisdiction.

4. *Objects of International Law* :—Territory. Land Frontiers. Maritime Frontiers and Claims to the Continental Shelf. The High Sea. Individuals. Business Enterprises and Ships.

5. *International Transactions* :—International Treaties. Unilateral Acts and Quasi-Contractual Obligations. International Torts.

6. *War and Neutrality* :—Measures Short of War. State and Effects of War. Warfare on Land. Military Occupation of Enemy Territory. Maritime Warfare. Warfare in the Air. Penalties for the Violation of Rules of Warfare. Neutrality. Civil War and Belligerency. Termination of War.

And either

B. *The Law of International Institutions* :—Judicial International Institutions, with special reference to the History of International Arbitration, to the Permanent Court of International Justice and to the International Court of Justice. Administrative International Institutions (e.g., the Universal Postal Union, Unesco or the International Bank for Reconstruction and Development). Quasi-Legislative Institutions, with special reference to the International Labour Organization. General Purposes Institutions (with special reference to the United Nations and Institutions within the framework of the United Nations).

Or

C. *International Economic Law* :—Basic Standards, with special reference to the Standards of National and Most-Favoured-Nation Treatment. Protection of Property Abroad. Commercial Treaties, Monetary Agreements, State Loans and other State Contracts. The Calvo Clause, Methods of International Financial Control, and the Porter Convention. The Law relating to Trading with the Enemy, the International Economic and Financial Law of Military Occupation, the Protection of Neutral Property, and the Law of Reparations. The Law of International Economic and Financial Institutions (e.g., The International Bank for Reconstruction and Development and the International Monetary Fund).

BOOKS RECOMMENDED

A.—General Principles

Candidates are advised to commence their studies with reading either Brierly's *Law of Nations* (4th ed.) or Part One of Schwarzenberger's *Manual of International Law* (3rd ed.).

Text-books

Oppenheim : *International Law* (7th ed., ed. by Lauterpacht—2 vols.).

Schwarzenberger : *International Law as Applied by International Courts and Tribunals* (2nd ed.).

Case Books

Briggs : *The Law of Nations* (2nd ed.).

Hudson : *Cases and Other Materials on International Law* (3rd ed.).

Green : *International Law through the Cases*.

*Periodicals**American Journal of International Law.**British Year Book of International Law.**International Organization.**Year Book of World Affairs.**Further Reading—(Special Subjects) :—***B.—The Law of International Institutions**Eagleton : *International Government* (2nd ed.).Goodrich-Hambro : *The Charter of the United Nations* (2nd ed.).Hudson : *International Tribunals.*Schwarzenberger : *The League of Nations and World Order.*Kelsen : *The Law of the United Nations.***C.—International Economic Law**Foreign Office : *Handbook of Commercial Treaties.*McNair : *Legal Effects of War* (3rd ed.).Schwarzenberger : *The Province and Standards of International Economic Law* (2 *International Law Quarterly*, 1948).Smith : *The Economic Use of International Rivers.***Conflict of Laws**

The nature of Private International Law.

Fundamental conceptions : classification : *renvoi* : domicil : public policy.

The rules relating to the jurisdiction of English Courts in cases involving a foreign element.

The principles of English Private International Law relating to the following matters :—

(1) Persons : status and capacity ; corporations.

The family : validity and effects of marriage ; divorce ; legitimacy ; adoption ; guardianship ; lunacy.

(2) Contracts : form, interpretation, illegality, discharge.

(3) Torts.

(4) Property : movables and immovables ; transfer of legal and equitable property. Succession : intestacy ; wills ; administration of estates.

(5) Procedure and Evidence : proof of foreign law ; recognition and enforcement of foreign judgments and decrees.

BOOKS RECOMMENDED*Text-books :—*Graveson : *Conflict of Laws* (2nd edition).or Cheshire : *Private International Law* (4th edition).*Further Reading :—*Dicey : *Conflict of Laws* (6th edition, Keith).Westlake : *Private International Law* (7th edition, Bentwich).Foote : *Private International Law* (5th edition, Bellot).Wolff : *Private International Law* (2nd edition).

Conveyancing

The general principles relating to estates and interests in land, both at law and in equity, under the systems of registered and unregistered titles, excluding title on death or by involuntary alienation.

General principles governing the interpretation of deeds. Form and contents of a conveyance of the legal estate and of a transfer of a registered title, including parties, recitals, consideration and receipt, covenants for title, parcels, habendum and the law of covenants generally, and the production of deeds and documents. The rules governing the settlement of the legal estate under the Settled Land Act and by way of trust for sale.

The interest under a settlement, including annuities and rentcharges. Portions charges, life interests, entailed interests, powers of appointment and after acquired property together with clauses for maintenance and advancement. The protection and enforcement of beneficial interests under the trust instrument against the trust property. Relation between trusts and settlements. Capacity of estate owners who are beneficial owners, estate owners under the Settled Land Act or personal representatives. Incapacity of infants, corporations and charities.

[*Note.*—Candidates will be expected to be familiar with the rules of real property governing the interests created by way of settlement.]

BOOKS RECOMMENDED

Text-books :—

Odgers : *Construction of Deeds*, Part I.

Potter : *Principles of Land Law under the Land Registration Act*.

Gibson : *Conveyancing* (17th edition) (omitting the Parts not within the syllabus).

Potter : *Settlement of the Legal Estate* (2nd edition, 1948).

Potter : *Registered Land Conveyancing* (or Key & Elphinstone, 14th edition, vol. 3).

Further Reading :—

Strahan : *Construction of Settlements and Wills*.

Norton : *Deeds* (2nd edition).

Williams : *Vendor and Purchaser* (4th edition).

Wolstenholme and Cherry's *Conveyancing Statutes* (12th edition).

Hood and Challis' *Property Acts* (8th edition).

Candidates are reminded that notes and articles of interest to the student appear in the *Conveyancer* and the *Law Quarterly Review*.

Succession, Testate and Intestate

*Wills :—*Outline of the history of Wills and powers of testamentary disposition ; nature of Wills and Codicils ; capacity to make Wills ; making and revocation of Wills ; appointment of executors ; probate (in outline only) ; construction of Wills.

*Intestate Succession :—*Outline of the history of the rules of inheritance and succession on intestacy ; modern rules of succession ; rules as to grant of administration (in outline only).

*Devolution of Property on Executors and Administrators :—*Powers of personal representatives. Administration of assets of solvent and insolvent estates.

[*Note.*—While candidates must show acquaintance with such practical matters as the making of Wills, the elements of probate practice and of the practice governing the grant of letters of administration, emphasis will be laid, in the examination, on the general principles of law governing the subject.]

BOOKS RECOMMENDED

Text-books :—

Parry : *The Law of Succession* (2nd edition).

Bailey : *The Law of Wills* (2nd edition).

Further Reading :—

Sanger : *Wills and Intestacies* (2nd edition).

Williams : *Executors* (13th edition).

Wolstenholme and Cherry's *Conveyancing Statutes* (12th edition).

Mercantile Law

(Agency and Sales and Other Dispositions of Goods.)

Agency.—The nature and creation of the principal and agency relationship and the scope of the Agent's authority. The position of the Principal and Agent vis-a-vis third parties ; contracts and torts ; passing of property by Agents and the Factors Act 1889. Rights and duties of Principal and Agent *inter se*. Agent's lien. Agent's commission. Termination of agency. The Agency of married women.

Sales and other dispositions of goods.—Nature of goods, property possession and delivery. Special rules relating to the Sale of Goods under the Sale of Goods Act 1893. C.I.F., F.O.B., and other special forms of international sales. Gifts *inter vivos* and *donationes mortis causa*. Bills of Sale. Bailments. Hire Purchase Agreements. Pledges. Effect of Bankruptcy and Liquidation. Doctrine of relation back and reputed ownership.

Candidates will be supplied in the examination room with Queen's Printer copies of the *Sale of Goods Act* 1893, and the *Factors Act* 1889.

BOOKS RECOMMENDED

Agency :

Preliminary reading

Chapters on Agency in G. C. Cheshire and C. H. S. Fifoot: *Law of Contract* (3rd edition).

T. M. Stevens : *Elements of Mercantile Law* (11th edition).

J. Charlesworth : *Principles of Mercantile Law* (6th edition).

Text-books

R. Powell : *The Law of Agency* (1952)

Reference books

W. Bowstead : *The Law of Agency* (11th edition).

Sale of Goods :—

Preliminary reading

Chapters on Sale of Goods, Hire Purchase, Bailments and Bankruptcy in T. M. Stevens : *Elements of Mercantile Law* (11th edition) and J. Charlesworth : *Principles of Mercantile Law* (6th edition).

Text-books

L. A. Goodeve : *Modern Law of Personal Property* (9th edition) (pp. 1-193).

C. M. Schmitthoff : *The Sale of Goods*.

Reference books

M. D. E. S. Chalmers : *Sale of Goods Act* (12th edition).

C. M. Schmitthoff : *The Export Trade* (2nd edition) (Part I and Chaps. 14 and 19).

G. W. Paton : *Bailment in the Common Law*.

Students should pay particular attention to articles appearing in the legal periodicals especially the *Law Quarterly Review* and the *Modern Law Review*.

Industrial Law

The subject-matter is the law governing the relations between employers and employed in all their aspects, whether considered as single individuals or as members of groups or organizations, and including the legal effect of such relationship upon third parties.

The common law of master and servant. Restrictive covenants in contracts of employment. Employer's liability for the wrongful acts of his employee. Employer's liability at common law and under statute for injuries to the servant.

Statutory conditions affecting hours, wages, health, welfare, safety and other conditions of employment. The principles of the legislation relating to employment in factories, shops, mines, road transport, agriculture, public utilities and other occupations. Wages Boards and similar bodies.

The law of associations. Voluntary societies. The doctrine of restraint of trade and its effect on trade unions. The legal status of trade unions, their powers, rights, duties, liabilities and political activities. Amalgamation and dissolution. Collective bargaining. The Fair Wages Clause. Strikes and lockouts. Picketing and intimidation. Price-fixing associations. Civil conspiracy.

National insurance, with particular reference to those provisions which specially concern employers and employed as such (e.g. unemployment insurance and the National Insurance (Industrial Injuries) Act).

Arbitration and conciliation. The Industrial Court.

The central and local authorities responsible for inspection, administration and enforcement of industrial law. Their powers and procedure. The International Labour Office.

BOOKS RECOMMENDED*Text-books :—*

Richardson : *Industrial Relations in Great Britain*.

Diamond or Batt : *Law of Master and Servant*.

Tillyard : *The Worker and the State* (2nd edition).

Redgrave : *The Factories Act*.

Wilkinson : *The Shops Act*.

Gare : *Restraint of Trade*.

T. K. Djang : *Factory Inspection in Great Britain*.

W. Mansfield Cooper : *Outlines of Industrial Law, Ministry of Labour Industrial Relations Handbook* (with supplement).

D. C. L. Potter and D. H. Stansfield : *National Insurance*.

- D. C. L. Potter and D. H. Stansfield : *The National Insurance (Industrial Injuries) Act.*
 J. H. Munkman : *Employers Liability at Common Law.*
 N. Citrine : *Trade Union Law.*
 I. G. Sharp : *Industrial Conciliation and Arbitration in Great Britain.*

Further Reading :—

- Hutchins and Harrison : *History of the Factory Acts.*
 Milne-Bailey : *Trade Unions and the State.*
 Haslam : *Law Relating to Trade Combinations.*
 Robson : "Industrial Law (1885-1935)," *Law Quarterly Review* Jan. 1935.
Collective Bargaining (I.L.O.).
 Amulree : *Industrial Arbitration.*
 Webb : *Industrial Democracy.*

Reference Books :—

- Milne-Bailey : *Trade Union Documents.*
Annual Survey of English Law. Industrial Law Section.
Annual Report of the Chief Inspector of Factories.
Annual Report of the Ministry of Labour.
 MacSwinney : *Law of Mines, Quarries and Minerals.*
Report on Collective Agreements (H.M.S.O.).
 Legislative Series : *International Labour Office.*
 Willis : *Law of Workmen's Compensation.*
 Butterworth's *Digest of Workmen's Compensation Cases.*

Law of Domestic Relations

(a) *Marriage.*—Background of ecclesiastical law. Nature of marriage relationship. Requirements of a valid marriage ; form (in outline only) ; capacity and consent of parties and third parties ; consanguinity ; the distinction between void and voidable marriages ; classes of void marriages ; the distinction between decrees of nullity and dissolution of marriage ; grounds of nullity and for divorce ; defences to petitions for nullity and divorce (including absolute and discretionary bars).

The changing legal position of the married woman and the obligations of husband and wife *inter se* during marriage including validity of mutual contracts and mutual liability in tort, maintenance, residence, and name. Liability to third parties in contract and in tort.

Separation by agreement. Grounds for separation by order or decree.

(b) *Parent and Child.*—Background of common law and equity and growth of statutory regulation. Circumstances giving rise to relation of parent and child. Rights and obligations of parents with special reference to custody, residence, maintenance, and education. General principles relating to exercises of powers of the courts, and of local authorities under the Children's Act.

General principles relating to incorporation into parental authority by adoption, and legitimation. Guardianship.

[Candidates will not be required to display any knowledge of the rules of Conflict of Laws or of the details of either court procedure or of the Court's powers in respect of alimony, maintenance and settlements.]

BOOKS RECOMMENDED

As Preliminary Reading :—

Grant : *Marriage, Separation and Divorce* (2nd edition).

Winter : *Children and Young Persons* (Snell's Equity, 23rd edition, chapters 14 and 15).

Text-books :—

Warmington or Tolstoy :	{ <i>Law and Practice in Divorce ; Law and Practice of Divorce and Matrimonial Causes</i> (2nd edition) }	Excluding the chapters on practice.
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Clarke Hall and Morrison : *Children and Young Persons* (3rd edition).

Reference Books :—

Eversley : *Law of Domestic Relations* (6th edition).

Latey and Rees : *Law of Divorce* (13th edition).

Lush : *Husband and Wife* (4th edition and supplement).

Lushington : *Summary Jurisdiction (Separation and Maintenance) Acts* (3rd edition).

Report of the Committee on the Care of Children (The Curtis Committee, Cmd. 6922).

MASTER OF LAWS, DOCTOR OF PHILOSOPHY AND DOCTORS OF LAWS

Regulations relating to examinations for the Degrees of LL.M., Ph.D. and LL.D. are contained in separate pamphlets which may be obtained on application to the External Registrar.

UNIVERSITY OF LONDON



REGULATIONS

FOR THE

LL.M. & LL.D. DEGREES

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with the special Regulations which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1.

September, 1953

MASTER OF LAWS (LL.M.)

A candidate may obtain the LL.M. Degree *either* (a) by written papers only *or* (b) in cases approved by the University, by written papers and a dissertation.

REGULATIONS FOR THE REGISTRATION OF EXTERNAL STUDENTS FOR HIGHER DEGREES

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma or postgraduate certificate will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry to the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee, provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and fails, withdraws, or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required to cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted. A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed in the Regulations, obtain the necessary entry papers, and return them to the University with the examination fee.

FEES

								£	s.
Registration Fee	..	..	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	..	..	2	2

A.—EXAMINATION WITHOUT DISSERTATION

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have obtained the LL.B. Degree of this University not less than two academic years previously (in exceptional circumstances this interval may be reduced) ; and (b) have been registered as an External Student preparing for the LL.M. Examination at least twelve calendar months before the last date of entry. All candidates, when registering, are required to give notice of the subjects chosen.

DATE OF EXAMINATION

The examination shall take place once each year, and shall commence on the third Monday in September.

REGISTRATION

Candidates should normally register during the period April–May in the year preceding the examination. Applications received after 1 June will only be considered under the regulations governing late registration. The last date for late registration is 1 May in the year of the examination.

ENTRY TO EXAMINATION

Every candidate entering for this examination must apply to the External Registrar for an entry form, which must be returned duly filled up and accompanied by the proper fee, not later than 1 June.

Any candidate who has applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

SCHEME OF EXAMINATION

1. Candidates shall be examined in *four* of the following 14 subjects.

- (1) Jurisprudence and Legal Theory.
- (2) Company Law and the General Principles of the Law of Unincorporated Associations.
- (3) Constitutional Laws of Canada, Australia, and *either* India *or* Pakistan.
- (4) International Economic Law.
- (5) Law of International Institutions.
- (6) Legal History.
- (7) Mercantile Law.
- (8) Comparative Law of Contract in English and Roman Law.
- (9) Conflict of Laws.
- (10) Muhammadan Law.
- (11) Hindu Law.
- (12) Land Law *either* (a) Law of Landlord and Tenant ; *or* (b) Planning Law.
- (13) Administrative Law and Local Government Law.
- (14) Criminology.

[*Note.*—A candidate who included Mercantile Law with the Special Subject Company Law at the LL.B. Examination, will not be permitted to offer Company Law and the General Principles of the Law of Unincorporated Associations at the LL.M. Examination. Candidates may only offer one of the subjects International Economic Law or Law of International Institutions, and a candidate who has offered Public International Law at the LL.B. Examination with one of these subjects as an alternative section, will only be permitted to offer the other alternative. A candidate who included Conflict of Laws at the LL.B. Examination will not be permitted to include that subject at the LL.M. Examination.]

2. The examiners shall not be precluded from testing candidates by means of oral questions.

3. All answers to examination questions shall be written in English unless instructions are given to the contrary.

B.—EXAMINATION WITH DISSERTATION

QUALIFICATIONS FOR ADMISSION

To be admitted to Part I of the Examination each candidate must (a) have obtained the LL.B. Degree of this University not less than one calendar year previously ; (b) have been specially approved by the University ; and (c) have been registered as an External Student preparing for the LL.M. Examination at least six calendar months before

the last date of entry to Part I. Each candidate when registering is required to give notice of the subjects chosen, and to submit the subject and syllabus of his Dissertation for approval by the University.

To be admitted to Part II of the examination each candidate must have satisfied the Examiners in Part I not less than one calendar year previously. A candidate will not be permitted to submit his Dissertation for examination until he has passed the written Examination.

DATE OF EXAMINATION

The examination shall take place once each year, and shall commence on the third Monday in September.

REGISTRATION

Candidates should normally register during the period September–November in the year preceding the examination for Part I. Applications received after 1 December will only be considered under the regulations governing late registration. The last date for late registration is 1 May in the year of the examination.

ENTRY TO EXAMINATION

Every candidate entering for this examination must apply to the External Registrar for an entry form, which must be returned duly filled up and accompanied by the proper fee not later than 1 June. A candidate submitting a dissertation for Part II must forward to the University by 1 September not less than three type-written or printed copies of his dissertation and a short abstract (three copies) of his dissertation comprising not more than 300 words. Two of the three copies of the dissertation must be bound in accordance with the regulations obtainable from the External Registrar.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

SCHEME OF EXAMINATION

1. The examination is divided into two Parts, as follows :—

Part I.—Candidates shall be examined in *two* of the 14 subjects listed for the examination without dissertation. The notes to subjects (2), (4), (5) and (9) shall apply also to this examination.

Part II.—A Dissertation.

Candidates must pass Part I before proceeding to Part II.

2. The Dissertation shall be a record of original work or other contribution to knowledge in some branch of Law. It should be written in English and should, in all appropriate cases, contain :—

- (i) an alphabetical table of cases ;
- (ii) a chronological table of statutes ; and
- (iii) a bibliography, covering books and articles. Each page should be numbered.

3. The Examiners shall not be precluded from testing a candidate by means of an oral examination on any part of his work and they may set a three-hour paper on the wider aspects of the Dissertation.

4. All answers to examination questions shall be written in English unless instructions are given to the contrary.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.	d.
Examination <i>without</i> dissertation	15	15	0
Examination <i>with</i> dissertation, either Part	7	17	6

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 August may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. x).

TIME TABLE

The order of the examination will be sent to candidates for the written examination as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. A list of successful candidates, arranged in alphabetical order, shall be published at the University and shall be divided into Examination *without* Dissertation and Examination *with* Dissertation Part II and Part I.

2. A mark of distinction will be placed against the names of those candidates who have completed the examination and who show exceptional merit.

3. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the pass lists shall be laid before the Senate for approval in November.

2. A diploma for the Degree of LL.M. under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

DISSERTATIONS

Copies of all successful Dissertations will be deposited for reference in the University Library.

Any copies of the dissertation which are not required by the University after the examination has been completed will be returned to the candidate.

SYLLABUSES

[GENERAL NOTE.—Students are advised to read articles on topics within their course of study, which appear in recent issues of *The Law Quarterly Review*, *The Modern Law Review*, *The Cambridge Law Journal*, *The Conveyancer and Property Lawyer*, *The Harvard Law Review*, *The Yale Law Journal*, *The Journal of Comparative Legislation*, *The Journal of Planning Law*, and *Current Legal Problems*.]

(I) Jurisprudence and Legal Theory

- A. The History of Legal Theory and modern schools of thought concerning the nature, origin and development of law and the state.
- B. Analysis and evaluation of specified concepts used in law, together with an elementary comparison of Roman, Anglo-American and French treatment of these concepts.

The concepts to be considered shall be the following :—Tort, Delict, Crime, Contract, Quasi-contract, Act, Omission, Intention, Recklessness, Negligence, Vicarious Liability, Strict Liability, Mistake of Fact and Law as affecting Liability, Abuse of Rights, Malice, Property, Conditional Rights.

Linguistic problems in law.

BOOKS RECOMMENDED

For Section A : Candidates are advised to make their own choice of classical authors, and the following works are suggested :—

Hobbes : *Leviathan*.

Locke : *Of Civil Government*.

Rousseau : *Social Contract*.

Austin : *Lectures in Jurisprudence*, Lects. 1, 5 and 6.

Bentham : *Theory of Legislation*.

Attention is also called to the following easily accessible works of modern authors :—

Roscoe Pound : *Introduction to the Philosophy of Law*.

Duguit : *The Law and the State* (Harvard Law Review, Vol. 31).

Kelsen : *The Pure Theory of Law* (L.Q.R. Vols. 50 and 51).

Frank : *Law and the Modern Mind*.

Olivecrona : *Law as Fact*.

General Works :

Julius Stone : *Province and Function of Law*.

Hall : *Readings in Jurisprudence*.

Maine : *Ancient Law*.

Vinogradoff : *Historical Jurisprudence*, Vol. I.

Malinowski : *Crime and Custom in Savage Society*.

Hobhouse : *Morals in Evolution*.

Robson : *Civilization and the Growth of Law*.

Diamond : *Primitive Law*.

Jones : *Historical Introduction to the Theory of Law*.

Friedmann : *Legal Theory* (2nd ed.).

Graveson : *The Spirit of English Law*, Juridical Review, 1948.

Graveson : *The Bases of Modern English Law*, Juridical Review, 1949.

For Section B :

Buckland and McNair : *Roman Law and Common Law* (2nd ed.).

Amos and Walton : *Introduction to French Law*.

Lawson : *Negligence in the Civil Law*.

Holmes : *The Common Law*.

Jerome Hall : *General Principles of the Criminal Law* (Indianapolis, 1947).

Winfield : *Province of the Law of Tort*.

Baty : *Vicarious Liability*.

Ames : "The Seisin of Chattels," in his *Lectures in Legal History*, or in *Essays in Anglo-American Legal History*, Vol. 3, or in 3 *Harvard Law Review* 23, 313, 337.

Allen : *Legal Duties*, essays at pp. 28, 95, 221.

Friedmann : *Law and Social Change in Contemporary Britain*.

Buckland : "The Duty to Take Care," 54 *L.Q.R.* 494.

Winfield : "The Myth of Absolute Liability," 42 *L.Q.R.* 37.

Friedmann : "Changing Functions of Contract in the Common Law" 9 *Univ. of Toronto L.J.* 15.

Williams : "Language and the Law," 61 *L.Q.R.* 71, 179, 293, 384, 62 *L.Q.R.* 387.

Williams : "The Aims of the Law of Tort," 4 *Current Legal Problems*, 137.

Harris : "Liability without Fault," 6 *Tulane L. Rev.* 337.

Lawson : "The Duty of Care in Negligence," 22 *Tulane L. Rev.* III.

Douglas : "Vicarious Liability," 38 *Yale L.J.* 584, 720.

Selected Readings on the Law of Contracts (Association of American Law Schools, 1931) 114-165.

Relevant chapters of textbooks on Jurisprudence.

(2) **Company Law and General Principles of Unincorporated Associations**

Meaning of Corporate Personality and distinction between incorporated and unincorporated associations.

Unincorporated Associations.—Legal basis and types of unincorporated association. Creation and constitution. Membership and expulsion. Contracts, torts and property. Dissolution. Proceedings by and against associations.

Commercial Associations.—Partnerships, Joint Stock Companies, Unit Trusts, and Industrial and Provident Societies. Partnerships under the Partnership Act, 1890, and the Limited Partnership Act, 1907 (both in outline only). The firm name and property. Goodwill.

Company Law.—Formation of Companies under the Companies Act, 1948. Types of companies. Limited Liability. The nature and contents of the memorandum and articles of association. Flotation of Companies, Promoters and Prospectuses. Capital. Shares and dividends. Debentures. Meetings and resolutions. Directors and other officers. Annual Return, Accounts and Audit. Reconstruction and Amalgamation. Inspection. Winding Up (in outline only).

BOOKS RECOMMENDED

Lloyd : *Law of Unincorporated Associations*.

Underhill : *Principles of the Law of Partnership* or Strahan : *The Law of Partnership*.

Charlesworth : *Principles of Company Law*.

Palmer : *Company Law*.

For Reference :—

- Holdsworth : *History of English Law* (especially Volume 8).
 Formoy : *Historical Foundations of Modern Company Law*.
 Cooke : *Corporation, Trust and Company*.
 Levy : *Private Corporations and their Control*.
 Cohen Report on Company Law Amendment (Cmd. 6659).
 Buckley : *Company Law*.
 Gore-Brown : *Handbook of Joint Stock Companies*.
 Lindley : *Law of Partnership*.
 H. Samuels : *The Law of Trade Unions*.
 Milne-Bailey : *Trade Unions and the State*.
 Fuller : *Law Relating to Friendly Societies and Industrial and Provident Societies*.

Students should take care to consult, wherever possible, the latest editions of the recommended books. They are warned that the subject demands some previous knowledge of English Law in general and especially of the English Law of Contract and Agency, and of Trusts.

Candidates will be supplied in the examination-room with Queen's Printer Copies of the Companies Act, 1948.

(3) Constitutional Laws of Canada, Australia, and either India or Pakistan

Note.—Candidates should specify at the time of entry to the examination whether they are offering Constitutional Laws of India or Pakistan.

CANADA AND AUSTRALIA.

The development of responsible government in Canada and Australia (in outline). The growth of constitutional conventions. Prerogative powers and privileges of the Governor-General, Lieutenant-Governor or Governor. Restrictions upon legislative competence at common law, and the effect of the Statute of Westminster, 1931.

Problems of federalism illustrated by reference to Canada and Australia. Procedure for amending the constitution. The distribution of and restrictions upon legislative power. Parliamentary privilege. The second chamber and provisions for conflicts between the Houses. The structure of the executive. The judicial system and appeals to the Privy Council.

The treaty-making power and the power to implement treaties.

British nationality and local citizenship.

Co-operation between federation and states (Provinces).

Questions will not be set on the electoral system, parliamentary procedure, the party system, delegated legislation and administrative tribunals (otherwise than on the constitutionality of delegation), public corporations, the civil service, government liability, or local government.

INDIA.

The history (in outline) of British Government in India, and of the relations between the Government in England, the Central Government in India, and the local Governments and protected states. Centralization and decentralization. The growth of (i) a representative element in the legislatures, and (ii) responsible government. Constitutional Conventions. Communal Problems.

Legislative, executive and emergency powers and privileges of the President, State Governors and *Rajpramukhs*.

Problems of federalism (illustrated by reference to other federations). Procedure for amending the constitution. The different types of states and territories : federations of former protected states. The distribution of and restrictions upon legislative power. Fundamental rights. Parliamentary privilege. Second chambers and provisions for conflict between the Chambers. The structure of the executive and limitations of its power. The judicial system. Supreme Court, High Courts, other Courts. Public Finance.

Commonwealth Nationality and Indian citizenship.

The treaty-making power and the power to implement treaties.

Co-operation between the Centre and the Units.

Questions will not be set on the electoral system, parliamentary procedure, the party system, delegated legislation and administrative tribunals (otherwise than on the constitutionality of delegation), public corporations, the civil service, government liability, local government.

PAKISTAN

The history (in outline) of British Government in India, and of the relations between the Government in England, the central Government in India and the local Governments and protected states. Centralization and decentralization. Effect of the Statute of Westminster, 1931. The growth of (i) a representative element in the legislatures, and (ii) responsible government. Constitutional Conventions. Communal Problems.

Legislative, executive, and emergency powers and privileges of the Governor-General and Provincial Governors.

Problems of federalism (illustrated by reference to other federations). Procedure for amending the constitution. The different types of states and provincial administrations : federations of former protected states. The distribution of and restrictions upon legislative power. Parliamentary privilege. Second chambers and provisions for conflict between the Chambers. The structure of the executive. The judicial system. The Privy Council, the Federal Court, High Courts, other Courts. Public Finance.

Commonwealth Nationality and Pakistan citizenship.

The treaty-making power and the power to implement treaties.

Co-operation between the Centre and the Units.

[*Note.*—Candidates will be required to know such constitutional enactments as obtain the force of law not less than six months before their Examination.]

Questions will not be set on the electoral system, parliamentary procedure, the party system, delegated legislation and administrative tribunals (otherwise than on the constitutionality of delegation), public corporations, the civil service, government liability, local government.

BOOKS RECOMMENDED

General

Text-books :—

Jennings and Young : *The Constitutional Laws of the British Commonwealth* (2nd ed.) (relevant portions).

Latham : *The Law and the Commonwealth* (1949) ; being a reprint of the supplementary chapter in Hancock : *Survey of British Commonwealth Affairs*, Vol. I, Problems of Nationality 1937).

Wheare : *The Statute of Westminster and Dominion Status*, 5th ed. ; *Federal Government* (1946).

Further Reading and Reference :—

Keith : *Responsible Government in the Dominions*, 2 vols. (2nd ed. 1928) ; *The Dominions as Sovereign States* (1938).

Evatt : *The King and his Dominion Governors* (1936).

Royal Institute of International Affairs : *The British Empire* (2nd ed. 1938).

Journal of the Society of Comparative Legislation.

For Canada

Dawson : *The Government of Canada* (2nd printing with corrections, 1948).

Further Reading and Reference :—

Dawson : *Constitutional Issues in Canada* (1933).

The Development of Dominion Status (1937).

Kennedy : *The Constitution of Canada* (2nd ed., 1938).

Essays in Constitutional Law (1934).

Statutes, Treaties and Documents of the Canadian Constitution (2nd ed., 1930).

Lefroy : *Canada's Federal System* (1913).

The following articles should also be consulted :—MacDonald in (1936) 1 Univ. of Toronto L. J. 260 ; Jennings in (1937) 51 Harvard L. Rev. 1 ; symposium in (1937) 15 Canadian Bar Rev. 393 ff. ; Willis in (1939) 53 Harvard L. Rev. 251 ; Tuck in (1941) 4 Univ. of Toronto L. J. 33 ; note (1941) 19 Canadian Bar Rev. 45 ; Clokie in (1942) 20 Canadian Bar Rev. 395 ; Kennedy in (1943) 8 Cambridge L. J. 146 ; Willis in (1943) 21 Canadian Bar Rev. 257 ; note (1946) 24 Canadian Bar Rev. 223 ; Laskin in (1947) Canadian Bar Rev. 1054.

For Australia

Sawer : *Australian Constitutional Cases* (1948).

Wynes : *Legislative and Executive Powers in Australia* (1936).

Further Reading and Reference :—

The following articles should be consulted :—

Bailey : *Australian Treaties*, in (1935) *Australian and New Zealand Journal of International Law* ; *Australian Treaties* in (1937) *British Year Book of International Law*.

Evatt : *Constitutional Interpretation in Australia*, in (1939) 3 Univ. of Toronto Law Journal, 1.

Fry : *Australian Contributions to the Evolution of Parliamentary Government* in (1947) 1 *University of Queensland Papers* 1 ; *Australian Constitutional Law*, in (1947) 1 *University of Queensland Papers*, 52.

Garran : *The Development of the Australian Constitution* (1924), 40 L.Q.R. 202.

Greenwood : *Future of Australian Federalism* (1946).

Holman : Constitutional Relations in Australia (1930) 46 L.Q.R. 502.

Kerr : Law of the Australian Constitution (1925).

(The following lists are not intended to be exclusive of other reading)

For India.

The Montague Chelmsford Report.

COWELL : *History and Constitution of the Courts and Legislative Authorities in India* (2nd Ed. 1936).

A. C. BANERJEE : *Indian Constitutional Documents*, Vols. I-III.

A. C. BANERJEE : *The Making of the Indian Constitution*.

SRI RAM SHARMA : *Constitutional History of India*.

Indian Independence Act.

The Constitution of India.

G. N. JOSHI : *The Constitution of India*.

For Pakistan.

The Montague Chelmsford Report.

The Government of India Act, 1935, as amended up to date in its application to Pakistan.

COWELL : *History and Constitution of the Courts and Legislative Authorities in India* (2nd ed., 1936).

A. C. BANERJEE : *Indian Constitutional Documents*, Vols. I-III.

Indian Independence Act.

G. B. JOSHI : *The New Constitution of India*.

K. VENKOBA RAO : *The Indian Constitution*.

(4) International Economic Law

Definition. History. Sources. General Principles.

Principles of International Economic Law : Economic State Sovereignty. Economic and Financial Aspects of Extraterritoriality. Freedom of Commerce. Freedom of Communications. Freedom of Navigation. Freedom of the Seas.

Standards of International Economic Law : Functions. Minimum Standards. The Standard of Reciprocity. The Most-Favoured-Nation Standard. The National Standard. The Standard of the Open Door. The Standard of Preferential Treatment. The Standard of Economic Good Neighbourliness. The Interplay of the Standards. Circumvention and Infraction of the Standards.

International Economic Transactions : Treaties of Commerce. Agreements on Production, Conservation of Resources, Transport and Communications. Barter Agreements, Inter-State Loans, Monetary and Payment Agreements, and Foreign Aid Conventions. Double Taxation Conventions. The International Economic Law of Tort, with special reference to the Protection of Private Property abroad and State Contracts. Legal Aspects of International Economic and Financial Control.

The Law of Economic Warfare : Economic Reprisals. The Law relating to Trading with the Enemy. The International Economic Law of Military Occupation. Economic War Crimes. The Protection of Neutral Property. War Claims. The Law of Restitution and of Reparations.

International Economic Institutions : Representation of Economic Interests Abroad. Economic and Financial Unions, with special reference to Customs Unions. The Economic and Social Council of the United Nations. The International Bank for Reconstruction and Development and the International Monetary Fund. The International Trade Organization. Regional Economic Organizations, with special reference to the Organization for European Economic Co-operation. International Economic Sanctions.

BOOKS RECOMMENDED

Candidates should study the following works which are recommended in the syllabus for Public International Law at the LL.B. Examination.

Text-books :—

Oppenheim : *International Law* (7th ed., Lauterpacht—with special reference to Vol. I §§ 578–581 : *Commercial Treaties*).

Schwarzenberger : *International Law as Applied by International Courts and Tribunals*, 2nd ed. (with special reference to Part Three : *State Jurisdiction*).

Foreign Office : *Handbooks of Commercial Treaties*.

McNair : *Legal Effects of War* (3rd ed.).

Schwarzenberger : *The Province and Standards of International Economic Law* (2 *International Law Quarterly*, 1948).

Smith : *The Economic Use of International Rivers*.

Case Books :—

Briggs : *The Law of Nations* (2nd ed.).

Hudson : *Cases and Other Materials on International Law* (3rd ed.).

Green : *International Law through the Cases*.

Periodicals :—

American Journal of International Law.

British Year Book of International Law.

International Organization.

Year Book of World Affairs.

And, in addition, the following :—

Feilchenfeld : *Public Debts and State Succession*.

Handbook of Commercial Treaties (Foreign Office).

Intergovernmental Commodity Control Agreements (International Labour Office).

Schwarzenberger : *The Province and Standards of International Economic Law* (2 *International Law Quarterly*, 1948).

Schwarzenberger : *The Most-Favoured-Nation Standard in British State Practice* (22 *British Year Book of International Law*, 1945).

(5) Law of International Institutions

General Aspects of International Institutional Law : Definition. Development. Sources. Functions and Types of International Institutions. General Principles of International Institutional Law.

Judicial International Institutions : Functions. Organization. Jurisdiction. Procedure. Award, Judgment, Advisory Opinions.

Administrative International Institutions : Functions. Membership, Organization. Jurisdiction.

Quasi-Legislative International Institutions : Functions. Membership. Organization. Jurisdiction.

Comprehensive International Institutions : Functions. Membership. Organization. Jurisdiction.

BOOKS RECOMMENDED

Candidates should study the following works which are recommended in the syllabus for Public International Law at the LL.B. Examination.

Text-books :—

Oppenheim : *International Law* (7th ed., ed. by Lauterpacht—with special reference to Vol. I, Chapter IV : *The Legal Organization of the International Community*, and to Vol. II, Part I : *Settlement of State Differences*).

Schwarzenberger : *International Law as Applied by International Courts and Tribunals*, 2nd ed. (with special reference to Part Seven : *The Law of International Institutions*).

Case Books :—

Briggs : *The Law of Nations*.

Dickinson : *Cases and other Materials on International Law*.

Green : *International Law through the Cases*.

Periodicals :—

American Journal of International Law.

British Year Book of International Law.

International Organization.

Year Book of World Affairs.

And, in addition, the following :—

Further Reading :—

Eagleton : *International Government* (2nd ed.).

Goodrich-Hambro : *The Charter of the United Nations* (2nd ed.).

Hudson : *International Tribunals*.

Hudson : *The Permanent Court of International Justice* (3rd ed.).

Jenks, C. W. : *Some Constitutional Problems of International Organization* (22 British Year Book of International Law, 1945).

Kelsen : *The Law of the United Nations*.

Schwarzenberger : *The League of Nations and World Order*.

The United Nations Conference on International Organization (Selected Documents) (United States, Department of State).

Periodical :—

Year Book of the United Nations.

(6) Legal History

English legal history generally (as in the LL.B. Examination) with special reference to its bearing upon the following topics in the prescribed period.

The period prescribed until further notice is 1216-1327.

The main movements of legal thought. Characteristics of mediaeval law. Influence of civil, canon and mercantile law. Legislation. Case law, local customs. Principal sources of legal history (records, year books, treatises).

The courts of law (including Parliament). Local courts. Justices of the peace. The judiciary and the legal profession.

The forms of action and the outlines of procedure and pleading. Battle. Wager of law. The jury.

Real property. Common law estates. Conveyances and their effects. Feudalism. Seisin. Inheritance.

Personal property. Ownership and possession.

Contract at common law and in law merchant. Ecclesiastical competition.

Tort. Trespass. Defamation and its relation to ecclesiastical jurisdiction.

Criminal law (treason, felonies, misdemeanours). Appeals, indictments, pardons. Forfeiture and escheat.

Law merchant (its sources, nature and the institutions administering it).

BOOKS RECOMMENDED

Plucknett : *Concise History of the Common Law* (4th edition) is a general introduction, but is not sufficiently detailed for the special period.

Pollock and Maitland : *History of English Law* should be used as a text-book, supplemented by Holdsworth : *History of English Law* (3rd edition) where relevant.

The following works on special topics can be consulted with advantage :—

Ames : *Lectures on Legal History*.

Thayer : *Treatise on Evidence*.

Pollock and Wright : *Possession in the Common Law*.

Fletcher : *Carrier's Liability*.

Jouon des Longrais : *La Conception Anglaise de la Saisine*.

Lambert : *Les Year Books*.

Winfield : *Chief Sources of English Legal History*.

H. Kantorowicz : *Bractonian Problems*.

Plucknett : *Legislation of Edward I*.

The publications of the Selden Society and the Ames Foundation are in most law libraries, and the "Rolls Series" of year books is available in many municipal reference libraries. These publications frequently contain introductions of great value, and those falling within the special period should be studied. Articles and reviews in the *Law Quarterly Review* and the *English Historical Review* should be consulted.

(7) Mercantile Law

(Carriage of Goods by Sea and Marine Insurance)

(a) *Carriage by Sea*. The form of the contract. Charterparties and bills of lading. Rights and duties of shipowner at Common Law. Carriage of Goods by Sea Act, 1924. Protection of shipowner and limitation of his liability under the Merchant Shipping Acts. The bill of lading as a document of title and its function in relation to overseas trade. Bills of Lading Act, 1855. Contracts for the sale of goods on C.I.F. and F.O.B. terms. Loading and discharging. Freight and demurrage, general

average, and the York-Antwerp rules (all in outline only). The ship-owner's lien. Stoppage in transit. Measure of damages for breach of the contract. Comparison with rules relating to carriage of Goods by Air; The Carriage of Goods by Air Act, 1932; Air Consignment notes (all in outline only).

(b) *Marine Insurance*. General principles. Insurable interest. Duty of disclosure. Principles of indemnity. Formation of the contract. Premium—its retention and return. Conditions and warranties, and their interpretation. Loss and abandonment, and measure of indemnity. Assignment. Re-insurance.

BOOKS RECOMMENDED

Carriage by Sea :—W. Payne : *Carriage of Goods by Sea*; Lord Chorley and O. C. Giles : *Shipping Law*, Part II. For reference : Scrutton : *Charterparties and Bills of Lading*.

Insurance :—M. P. Picard : *Elements of Insurance Law*; Lord Chorley and O. C. Giles : *Shipping Law*, Part III. For reference : MacGillivray : *Law of Insurance*; Arnould : *Marine Insurance*.

General reference may be made to Smith's *Mercantile Law* (ed. Gutteridge) and to Schmitthoff : *The Export Trade*.

Note.—Students should take care to consult, wherever possible, the latest editions of the recommended books. They are warned that the subject demands some previous knowledge of English Law in general and especially of the English Law of Contract.

Candidates will be supplied in the examination-room with Queen's Printer Copies of the Marine Insurance Act, 1906, and the Carriage of Goods by Sea Act, 1924.

(8) Comparative Law of Contract in Roman and English Law

The historical development of the Law of Contract in both systems.

General principles of the law in both systems :—

Classification of contracts. Constitution of legal relations.

Consent and circumstances affecting reality of consent.

Capacity.

Validity of conditions. Modalities.

Causa and Consideration.

Form. The comparative importance of writing.

Discharge, including effect of frustration and delay.

Remedies for breach.

Transfer of contractual rights and obligations. Acquisition of contractual rights and obligations for third parties. Agency.

Quasi-Contract.

The influence of Roman Law on the English Law of Contract and Quasi-Contract.

BOOKS RECOMMENDED

de Zulueta : *Institutes of Gaius*, III 88–181, IV 69–74.

Moyle : *Institutes of Justinian*, III 13–29, IV 7.

Buckland : *Text-book of Roman Law*, CXLIII–CXCV.

Buckland : *Main Institutions of Roman Law*, chapters XIII–XVII.

Buckland and McNair : *Roman Law and Common Law*, chapters VI–IX.

Jolowicz : *Historical Introduction to Roman Law* (2nd ed.), relevant parts of chapters XI, XVII and XXIX.

Holdsworth : *History of English Law*, II 82-87, 275-277 ; III 412-454 ; VIII 1-98.

Cheshire and Fifoot : *Law of Contracts*.

Pollock : *Principles of Contract*.

(9) Conflict of Laws

1. *English Conflict of Laws*

(a) The nature and basis of the conflict of laws. The questions of choice of law and jurisdiction. Renvoi and classification. The scope of public policy. Proof of foreign law.

(b) Domicile, status, marriage, legitimacy and legitimation, guardianship and curatorship. Domicile and residence of corporations. The capacity of natural persons and corporations.

(c) Contracts : validity, interpretation and effect of contracts, including sale of goods and of land, carriage by sea and by air, agency. Torts.

Movable and immovable property. Conveyance, transfer and assignment *inter vivos*. Marriage contracts and settlements and the effect of marriage on property in general.

Succession on death, on intestacy and under wills.

Powers of appointment.

(d) The Jurisdiction of English Courts. Ordinary jurisdiction. Assumed jurisdiction. Jurisdiction in matrimonial causes, administration of estates, bankruptcy.

Procedure : The delimitation of substance and procedure. Evidence, remedies, priorities, limitation of actions.

(e) The jurisdiction of foreign Courts according to English law. Judgments *in rem* and *in personam*. The recognition and enforcement of foreign judgments and arbitration awards at common law and under statutes. Defences to enforcement. *Lis alibi pendens*.

2. *Comparative Conflict of Laws*

The relation between public and private international law and between the sovereignty concept and the conflict of laws. The difference between international, inter-local and inter-personal conflicts.

The following theories of the conflict of laws ; territorial, including vested rights, internationalist, local law and administration of justice. The influence of Bartolus, Huber, Savigny, Story and Dicey on the conflict of laws.

Public policy and *ordre public*.

The general problems of the basis of the personal law. Domicile in U.S.A. and on the Continent. The problem of the wife's dependent domicile. The treatment of marriage, parental power, and the status of legitimacy in foreign conflicts systems.

The principle of *Locus regit actum*.

The Law governing corporations. The conflict between the law of incorporation and the law of the administrative centre.

The doctrine of the proper law and *autonomie de la volonté*, particularly in the law of contracts.

The doctrines of reciprocity and obligations in the recognition and enforcement of foreign judgments.

The place of treaties in the conflict of laws. Attempts at unification with special reference to the Hague Conventions, and the American Law Institute's Restatement of the Conflict of Laws.

[*Note.*—Candidates are not expected to know the details of the various systems of Private International Law, but are expected to know the main differences in broad principle between the English and foreign systems. Although it is possible to take this subject without knowing any foreign language, a knowledge of French or German is an advantage.]

BOOKS RECOMMENDED

1. *English Conflict of Laws*

Text-books :—

Cheshire : *Private International Law* (4th ed.).

Graveson : *Conflict of Laws* (2nd ed.).

Graveson : *Cases on the Conflict of Laws*.

Works of Reference :—

Dicey : *Conflict of Laws* (6th ed.).

Westlake : *Private International Law* (7th ed.).

Schmitthoff : *English Conflict of Laws* (2nd ed.).

Falconbridge : *Essays in the Conflict of Laws*.

2. *Comparative Law*

Text-books :—

Wolff : *Private International Law*.

Kuhn : *Comparative Commentaries on the Conflict of Laws*.

Works of Reference :—

(a) General.

Rabel : *Conflict of Laws*.

Lorenzen : *Selected Articles on the Conflict of Laws*.

(b) Canada.

Falconbridge : *Essays in the Conflict of Laws*.

Johnson : *The Conflict of Laws with special reference to the law of the Province of Quebec*.

(c) United States.

Restatement of the Conflict of Laws (American Law Institute).

Beale : *Conflict of Laws*.

Beale : *Cases on the Conflict of Laws*.

Cook : *The Logical and Legal Bases of the Conflict of Laws*.

(d) Continental Countries.

Niboyet : *Traité de Droit International Privé Français*.

Battifol : *Traité Élémentaire de Droit International Privé*.

Arminjon : *Précis de Droit International Privé*.

Schnitzer : *Handbuch des Internationalen Privatrechts* (2nd ed.).

Nussbaum : *Deutsches Internationales Privatrecht*.

Raape : *Deutsches Internationales Privatrecht* (2nd ed.).

[Note.—On both parts 1 and 2 of the syllabus candidates are advised to read relevant articles in The British Yearbook of International Law, the leading English and American reviews and, for surveys of the leading Continental systems, the *Recueil des Cours de l'Académie de Droit International à la Haye*.]

(10) Muhammadan Law

The law of succession at death including Inheritance, Legacies and Administration.

Candidates will be required to know the law according to the Hanafi, Ithna 'Ashari and either Maliki or Shafi'i schools, and should specify at the time of entry to the examination which of the two latter options they are offering.

They may also be required to answer questions on the theory of Muslim Jurisprudence so far as this is illustrated in the Law of Succession.

They should also be conversant with modern legislative and judicial developments of the law in force in Pakistan and Egypt and will also be given opportunity to show a knowledge of similar developments elsewhere. They should know the original Arabic authorities so far as these have been translated into English. Knowledge of Arabic is not essential but opportunity will be given for a candidate to obtain credit for such knowledge.

BOOKS RECOMMENDED

(a) Original Authorities.

Those texts of the Qoran which deal specifically with law. These may be found collected, e.g., in *Wilson's Digest*, cited below.

Hamilton : *Hedaya*.

Baillie : *Digest* (Haneefee) and *Code* (Imameea).

Baillie : *Mohummudan Law of Inheritance*.

Jones's translation of the *Sirajiyya*, preferably in Rumsey's edition.

Brij Mohan Doyal : *Durr ul Mukhtar*.

Howard : *Minhaj et Talibin*.

(b) Text-books.

A selection of the following :—

Mulla : *Principles of Mahomedan Law* (11th ed.).

Fitzgerald : *Mahammadan Law*.

Wilson : *Digest of Anglo-Muhammadan Law* (6th ed.).

Tyabji : *Principles of Muhammadan Law* (3rd ed., 1940).

Saksena : *Muslim Law as administered in British India*.

Ameer Ali : *Mohammedan Law* (4th ed., 2 vols. 1912 and 1918).

Russell and Suhrawardy : *First Footsteps in Muslim Jurisprudence*.

Kadri Pasha : *Code of Mohammadan Hanifite Personal Law* (trans. Sterry and Abcarius).

(c) Other works for reference.

The volumes in the Tagore Law Lectures Series dealing with topics of Muhammadan Law. These are recommended to be consulted for the personal views of their authors, not for the latest developments which may be more conveniently found in text-books. Accordingly the latest edition published in the author's own life-time will suffice.

Nawab Abdur Rahman : *Institutes of Muhammadan Law*.

Aghnides : *Mohammedan Theories of Finance*.

M. Ullah ibn S. Jung : *The Muslim Law of Inheritance*.

(d) For candidates knowing those languages works in Arabic, Persian, French, Italian and German will be recommended on request.

(II) Hindu Law

The joint Family and Partition. The subject will include both Mitakshara and Dayabhaga systems : the constitution and property of the joint family and the coparcenary ; rights and duties of the members ; maintenance ; debts and " the pious duty " ; rights, powers and liabilities of the manager, ancestral, or family business, partition. Modern case law and statutory modifications of Hindu law within the special subject.

Candidates will be required to know the original Sanskrit authorities so far as available in translations. Knowledge of Sanskrit is not essential but opportunity will be given for candidates to obtain credit for such knowledge.

BOOKS RECOMMENDED

Text-books :—

Raghavachariar : *Hindu Law, Principles and Precedents* (3rd ed. 1947, M.L.J. Office, Mylapore, Madras).

Mulla : *Principles of Hindu Law* (10th ed.).

Mayne : *Hindu Law and Usage* (11th ed., N. Chandrasekhara Aiyar).

The Hindu Code, 1948. Report of the Select Committee on the Bill to amend and codify the Hindu Law (published in the Gazette of India, 21 August 1948) ; and subsequent Reports of Select Committees of the Indian Parliament on the codification of Hindu Law.

Reference Books :—

(a) *Original authorities*

Manu (any edition of Jones's translation or that in the S.B.E. or Burnell).

Yajnavalkya (in Mandlik, cited below).

Minor Law Books (in the S.B.E.).

Stokes : *Hindu Law Books*.

Setlur : *Treatises on the Hindu Law of Inheritance* (or the separately published treatises).

Gharpure : *Mitakshara* (complete).

Vjavahara Mayukha (any of the four translations).

Katyayana Smriti (Kane's translation).

(b) *Other works for Reference*

The volumes in the Tagore Law Lectures Series dealing with topics of Hindu Law. These are recommended to be consulted for the personal views of their authors, not for the latest developments which may be more conveniently found in text-books. Accordingly, the latest edition published in the author's own life-time will suffice.

J. N. Bharracharya : *Commentaries on the Hindu Law*.

Golap Chandra Sarkar Sastri : *Hindu Law*.

J. C. Ghose : *Hindu Law*.

Rao Bahadur V. S. Mandlik, C.S.I. : *Yajnavalkya and Vyavahara Mayukha*.

West and Buhler : *Digest of Hindu Law*.

P. V. Kane : *History of Dharmasastra*.

(12) (a) Law of Landlord and Tenant

Historical introduction.

Creation, assignment and determination of leases and tenancies.

Rights and duties of the parties under leases and tenancies.

Special statutory obligations affecting leases and tenancies.

General principles of the law affecting Rent Restrictions.

The Agricultural Holdings Act, 1948.

BOOKS RECOMMENDED

Text-books :—

Hill and Redman : *Law of Landlord and Tenant* (11th ed. with supplement).

Foa : *General Law of Landlord and Tenant* (7th ed. with supplement).

Lloyd and Montgomerie : *Rent Control* (with supplement).

Megarry : *The Rent Acts* (6th ed.).

Further reading :—

Articles and notes in *Law Quarterly Review*, *Modern Law Review* and *Conveyancer and Property Lawyer*.

Woodfall : *Law of Landlord and Tenant* (24th ed. with supplement).

(12) (b) Planning Law

The historical development of town and country planning and control of agricultural land.

Machinery of Planning and Control. The Central Land Board and the Lands Tribunal, their functions and powers. Local planning authorities and joint planning boards, and their powers. Delegation of functions and powers. Judicial intervention.

Method of planning control. The preparation and revision of Development Plans by local planning authorities, and the powers and duties of the Minister of Town and Country Planning in relation thereto.

Control of development and advertisements. Applications for planning permission ; applications to determine whether planning permission required, appeals to Minister of Town and Country Planning. Rights of owner if planning permission is refused, revoked or modified. Default powers of the Minister of Town and Country Planning. Orders for preservation of trees, woodlands, and buildings of special architectural or historic interest. Development Orders.

Development charge. Nature, incidence, determination and security.

Enforcement of planning control. Enforcement notices and appeals ; penal development charges.

Depreciation of Land Values. Nature of rights arising from claims for loss of development value, including assignment.

Compulsory acquisition. Compulsory acquisition of land by Ministers, local authorities, statutory undertakers, and Central Land Board for the purposes of planning control.

The effect of the planning legislation on the substantive land law.

Candidates will be expected to be acquainted with the main provisions of the New Towns Act, 1946, and the Town and Country Planning Acts, 1947 and 1951, and with the statutory instruments made under or by virtue of such Acts.

BOOKS RECOMMENDED

Preliminary Reading :—

Report of the Royal Commission on the Distribution of the Industrial Population (Barlow Report)—Cmd. 6153.

Report of the Committee on Land Utilization in Rural Areas (Scott Report)—Cmd. 6378.

Final Report of the Expert Committee on Compensation and Betterment (Uthwatt Report)—Cmd. 6386.

Text-books :—

Charlesworth : *The Principles of Planning Law* (2nd ed.).

Heap : *Outline of The New Planning Law*.

Howard Roberts : *The Law of Town and Country Planning*.

Phillips : *The Agriculture Act, 1947*.

Further Reading :—

Doble : *Town Planning Contraventions, The Conveyancer and Property Lawyer* (1947), Vol. 11, p. 190.

FitzGerald : *General Aspects of the Town and Country Planning Act, 1947* : The Solicitor (1948), Vol. 15, p. 124 ; Development, *ibid.*, pp. 147, 171 and 196 ; Claims for Depreciation of Land Values, *ibid.*, p. 220 ; Development Charges, *ibid.*, p. 244, and (1949) Vol. 16, pp. 3 and 27 ; Bureaucratic Interference, *ibid.*, Vol. 15, p. 267 ; Conveyancing Points, *ibid.*, Vol. 16, pp. 51, 75, 99 and 125 ; and Registered Land, *ibid.*, p. 148. *Planning and Development under the Town and Country Planning Act, 1947* (Modern Law Review, 1948), Vol. II, p. 401.

Grafer : *Development Procedure under the Town and Country Planning Act, 1947*.

Potter : *New Land Law under the Town and Country Planning Bill* : The Conveyancer and Property Lawyer (1947), Vol. 11, p. 147 ; Twilight of Landowning, *ibid.* (1948), Vol. 12, p. 3 ; Caveat Emptor or Conveyancing under the Planning Acts, *ibid.* (1949), Vol. 13, p. 36.

Journal of Planning Law.

[*Note.*—Candidates will be supplied in the examination-room with Queen's Printer copies of the New Towns Act, 1946, Town and Country Planning Act, 1947, and the Agriculture Act, 1947.]

(13) Administrative Law and Local Government Law

The administrative, legislative and judicial powers of central and local government authorities in relation to (a) medical and welfare services, and (b) housing.

The administration of national insurance and national assistance.

The administration of (a) the production and supply of coal, gas and electricity, and (b) road, rail and water transport.

The Control of administrative tribunals and administrative legislation in England, United States of America and France.

BOOKS RECOMMENDED

The following books should be regarded as *additional* to those recommended in the syllabus for English Administrative Law at the LL.B. Examination. For each book the most recent edition must be used.

Jennings : *The Law of Housing* or

Hill and Kerrigan : *Complete Law of Housing* or

Schofield and Garner : *Housing Law and Practice*.

Speller : *National Health Service*.

Potter and Stansfield : *National Insurance*.

Steele : *National Assistance*.

Friedman : *The New Public Corporations and the Law* (*Modern Law Review*, Vol. 10, pp. 233, 377).

Kahn-Freund : *The Law of Inland Transport*.

Various : *Political Quarterly*, Vol. 21, No. 2.

National Board Series (Allen and Unwin), e.g., H. Townshend-Rose : *British Coal Industry*.

Acton Society Trust booklets (Series of 12) : *Nationalised Industry*-Dalton : *Electricity Act 1947*.

Karmel and Beddington : *Transport Act 1947*.

Stemp and Wing : *Gas Act 1948*.

The historical background to nationalisation can be found in :—

Robson (ed.) : *Public Enterprise*.

Gordon : *The Public Corporation in Great Britain*.

Cushman : *The Independent Regulatory Commission* (Chaps. VIII, IX).

Laski, Jennings and Robson : *A Century of Municipal Progress*.

O'Brien : *British Experiments in Public Ownership and Control*.

Davies : *National Enterprise*.

For comparative law problems :

Schwartz : *American Administrative Law*.

Sieghart : *Government by Decree*.

Dickinson : *Administrative Justice and the Supremacy of Law in the United States*.

Pound : *Administrative Law*.

Blachly and Oatman : *Administrative Legislation and Adjudication*.

Waline : *Droit Administratif*.

Warren (ed.) : *The Federal Administrative Procedure Act and the Administrative Agencies* (N.Y.U. School of Law).

Hamson : *Le Conseil d'Etat statuant au contentieux* (68 L.Q.R. 60).

(14) Criminology

I. *Introduction.* The legal and the criminological conception of crime. Relation between Criminology and Criminal Law. Adult Criminal Courts, Juvenile Courts, and some specific problems of Criminal Procedure.

II. *Criminology.* Methods of Study. Physical, psychological and sociological factors in criminal behaviour. Legal principles relating to insanity, mental deficiency and other forms of mental abnormality. Juvenile and female delinquency. Prostitution.

III. *Penology.* Philosophical, psychological and historical aspects of Punishment. The present penal system. Prison. Borstals. Institutions for young offenders. Probation. Problems of Prevention.

BOOKS RECOMMENDED

I. *Text-books :—*

Cyril Burt : *The Young Delinquent.*

Rupert Cross and P. Asterley Jones : *An Introduction to the Criminal Law.*

A. E. Jones : *Juvenile Delinquency and the Law* (Pelican Book).

C. S. Kenny : *An Outline of the Criminal Law.*

H. Mannheim : *Criminal Justice and Social Reconstruction ; The Dilemma of Penal Reform.*

W. Reckless : *Criminal Behaviour.*

E. H. Sutherland : *Principles of Criminology.*

Donald Taft : *Criminology.*

H. E. Barnes and N. K. Teeters : *New Horizons in Criminology.*

} One of these four.

Home Office, Prisons and Borstals (H.M. Stat. Off., 1945).

II. *Further Reading and Reference :—*

A. Aichhorn : *Wayward Youth.*

Mark Benney : *Low Company ; Gaol Delivery.*

John Bowlby : *Forty-Four Juvenile Thieves.*

A. M. Carr-Saunders, H. Mannheim, E. C. Rhodes : *Young Offenders.*

W. Norwood East : *Introduction to Forensic Psychiatry ; Society and the Criminal.*

A. C. Ewing : *The Morality of Punishment.*

L. W. Fox : *The Modern English Prison.*

K. Friedlander : *The Psychoanalytical Approach to Juvenile Delinquency.*

Sheldon and Eleanor Glueck : *After-Conduct of Discharged Offenders* (English Studies in Criminal Science, Vol. V).

M. Grünhut : *Penal Reform.*

W. Healy and A. Bronner : *New Light on Delinquency.*

W. Healy and B. Alper : *Criminal Youth and the Borstal System.*

D. K. Henderson : *Psychopathic States.*

H. H. Lou : *Juvenile Courts in the U.S.A.*

H. Mannheim : *Social Aspects of Crime in England between the Wars ; Juvenile Delinquency in an English Middletown.*

Claud Mullins : *Crime and Psychology ; Why Crime ?*

Leo Page : *The Sentence of the Court.*

L. Radzinowicz and J. W. C. Turner (ed.) : *Mental Abnormality and Crime ; The Modern Approach to Criminal Law ; Penal Reform in England.*

L. Radzinowicz : *A History of English Criminal Law*, Vol. I.

Edward Robinson : *Just Murder.*

G. Rusche and O. Kirchheimer : *Punishment and Social Structure.*

Russell : *Crime, a Treatise on Felonies and Misdemeanours* (10th ed.).

John A. F. Watson : *The Child and the Magistrate.*

Lawless Youth ; published by the Howard League for Penal Reform.

Annual Reports of the Prison Commission for 1947 and 1948 (Home Office).

The Probation Service (Home Office).

Capital Punishment (Home Office, Cmd. 7419, 1948).

DOCTOR OF PHILOSOPHY

Regulations for the Degree of Ph.D. are published in a separate pamphlet which may be obtained on application to the External Registrar.

DOCTOR OF LAWS (LL.D.)

1. Every candidate for the Degree of Doctor of Laws as an External Student must have obtained in this University (1) the LL.B. Degree, and (2), unless specially exempted by the Senate, the Degree of LL.M. or Ph.D. in Laws as an External Student.

2. The Degree is awarded for independent work that makes a distinct contribution to learning in the Faculty of Laws ; such work or works must represent the candidate's own independent investigation, and must not previously have been the basis for the award of a degree in this or in any other University ; but a candidate will not be precluded from incorporating in a work submitted for the purposes of the LL.D. Degree a smaller work on which a University degree has previously been awarded. In addition to the independent work presented, the candidate is invited to submit as subsidiary matter in support of his candidature any printed contribution or contributions to the advancement of the study of Law which he may have published conjointly.

3. Any duly qualified candidate may apply at any time to the External Registrar for an entry form which must be returned, duly completed, with a fee of twenty guineas (£21), and accompanied by four copies of such printed or typewritten contribution or contributions to learning as he may desire to submit. Candidates are warned that, in view of the summer vacation, the result of any entry submitted later than 1 May is liable to considerable delay. All candidates should give preliminary notice of intention to enter three months before sending in their entry forms.

4. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

5. Every candidate shall, upon the above-mentioned entry form, state in writing (1) the subject or subjects within the purview of the Faculty of Laws upon a knowledge of which he rests his qualification for the doctorate, (2) how far and in what respects his investigations appear to him to advance the study of his subject, (3) whether any of his contributions have been previously submitted in whole or in part for another degree in this or any other University ; and further he shall forward to the University with his entry form a short abstract, comprising not more than 300 words, of each of the works submitted.

6. After the examiners have read the work or works submitted, the candidate may be required to present himself at such place and upon such day or days as may be notified to him by the External Registrar to be further tested. It shall be within the discretion of the examiners to reject the candidate without such further test ; or in case the examiners shall, upon examination of the contribution or contributions to the advancement of learning submitted by the candidate, hold the same to be generally or specifically of such special excellence as to justify the exemption of the candidate from further test, he may be so exempted, provided that the report of the examiners shall set forth the fact and the grounds of such exemption.

7. The examiners shall not recommend the award of the Degree unless the independent work forms a distinct contribution to the advancement of learning (a) by reason of independent research which has led to a valuable addition to existing knowledge of the subject, or (b) by reason of a new and adequate critical survey of existing knowledge of that subject ; nor unless such work is satisfactory in regard to its literary presentation.

8. The examiners shall report to the Senate upon each candidature separately, and each such report of examiners shall contain, (a) a list of the works submitted in the candidate's own name for the purposes of the degree, (b) a list of any conjoint publications submitted in support of his candidature, (c) a statement that the works submitted by the candidate in his own name do or do not form a distinct contribution to the advancement of learning, (d) a concise statement of the grounds upon which he is or is not recommended by the examiners for the degree, (e) a statement that the work is or is not satisfactory in regard to its literary presentation.

9. After the report of the examiners shall have been approved by the Senate, the External Registrar shall notify the candidates who have been recommended for the degree ; but the degree shall not be conferred upon a candidate who did not submit published work until the work or works submitted shall have been published in full and four copies received by the Senate.

10. A diploma for the Degree of LL.D. under the seal of the University shall be delivered to each successful candidate.

A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

UNIVERSITY OF LONDON



REGULATIONS

FOR DEGREES IN

MUSIC

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations, which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Candidates for the Degree of Bachelor of Music as External Students are required to satisfy the minimum University and Faculty entrance requirements, to have been registered as External Students preparing for the Degree of B.Mus., and to pass the Intermediate and Final Examinations.

INTERMEDIATE EXAMINATION IN MUSIC

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have satisfied minimum University and Faculty entrance requirements and (b) have been registered as an External Student preparing for the degree of B.Mus.

Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced a course of study. Students for the June/July examination should normally apply for registration in the period October to December of the year preceding the examination, and not later than 25 February. Students for the December examination should normally apply for registration in the period January to March preceding the examination and not later than 5 October. **Students who apply to take the Final Examination less than three academic years from the date of registration are warned that an application for late registration, with a late fee of £2 2s., will be necessary when they apply for approval of candidature for the Final Examination.**

FACULTY REQUIREMENTS

A candidate who has satisfied the minimum University entrance requirements by means of a General Certificate of Education will be required to have passed at Ordinary or Advanced Level in a modern foreign language.

Languages at Ordinary Level will not be accepted for this purpose unless the syllabus provides for compulsory translation from English into the language.

DATE OF EXAMINATION

The examination shall take place twice in each year and shall commence on the second Monday in December and on the first Thursday after 24 June. The syllabuses for the December examination are the same as those for the preceding June/July.

ENTRY TO EXAMINATION

The candidate list for the June examination will be opened on 11 February. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 18 March and the candidate list will be closed on 25 March. No entry can be accepted after the candidate list has been closed.

The candidate list for the December examination will be opened on 24 September. Entry forms will not be despatched by post from the University after 29 October and the candidate list will be closed on 5 November. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

Whole examination	..	..	..	..	..	£	s.
						6	6
Referred subject	..	..	..	..	..	2	2

Exemption in virtue of another examination :—

Complete exemption	..	..	..	..	..	No fee
Partial exemption, per subject taken	..	..	..	..	..	2 2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the June/July examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

In the case of the December Examination no refund can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION AND SYLLABUSES

1. Candidates will be examined in :—

(1) **History of Music, Form and Analysis** (one paper).

General outlines of Musical History. Principles of design as illustrated in both vocal and instrumental compositions.

(2) **Harmony** (one paper). (3) **Counterpoint** (one paper).

Harmony and Counterpoint in not more than four parts, vocal and instrumental.

2. The examination shall be conducted by means of printed papers and an oral examination in general musical knowledge, including elementary Acoustics as affecting musical instruments.

3. Candidates shall not be approved by the examiners unless they have shown a competent knowledge in all the subjects of the examination.

4. All answers to examination questions shall be written in English unless instructions are given to the contrary.

5. A candidate who has passed the Intermediate Examination in Music will not be permitted to re-enter.

REFERENCE

1. A candidate who enters for the whole examination on one and the same occasion, but who fails to reach the required standard in one subject only, may be referred, i.e., he may be permitted to re-present himself for examination in that subject alone at one or more subsequent Intermediate Examinations in Music.

2. The examiners will recommend that a candidate be referred only if his failure in one subject is not serious, and if his performance in the remaining subjects is reasonably good.

3. A candidate who has completed the Intermediate Examination after having been referred in one subject will be deemed for all purposes to have passed the examination in question on the date of completion.

EXEMPTIONS

1. Candidates who have passed the Internal Intermediate Examination in Music of this University shall be exempt from the External Intermediate Examination in Music.

2. A candidate who has passed the B.A. General Examination of this University with Music as one of his subjects, or who has passed in Music as a subsidiary subject for B.A. Honours, is not thereby exempt from the Intermediate Examination in Music. He may, however, apply at the time of registration for exemption from the Intermediate Examination in Music ; each case will be considered on its merits.

TIME TABLE

The examination will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 15 August for the June examination, and on 3 January for the December examination, the External Registrar will publish a list of the candidates who have passed, arranged in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

3. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in January for the December examination and in July for the June examination.

4. Certificates of having passed the examination will not be issued except to qualified students applying for them.

5. Each successful candidate will receive a Detailed Report on his results in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass.

6. Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—

D—Failure ; E—Bad Failure.

7. Failure in a subject which includes a practical or oral examination indicates failure in the subject as a whole and no further information can be given regarding the candidate's performance in the various parts of the examination.

8. Detailed Result Reports will be sent to successful candidates from one to two months after the publication of the ordinary Pass List, but will be sent to unsuccessful candidates at the time when they are notified of the result of the examination.

9. Educational institutions in receipt of annual grants from public funds may apply for a statement of the detailed results of their candidates ; such applications must be accompanied by a list of the candidates' names, the name of the examination and the date at which it was taken. The results cannot be communicated until about two months after the publication of the Pass List and each institution will have communicated to it the results of those candidates only who are registered as pursuing a course of study at that institution.

B.MUS. EXAMINATION

Candidates who, in or before 1951, have passed Part I only of the B.Mus. Examination, under the old regulations then in force, will be permitted to enter for Part II until further notice. For details of Part II under the old regulations, see p. 710.

INTRODUCTORY NOTE

The course of study for the B.Mus. Examination normally extends over the equivalent of two academic years of full-time study.

Successful candidates at the Final Examination will be awarded First Class Honours, Second Class Honours, or a Pass B.Mus. Degree.

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have been registered as an External Student preparing for the Degree of B.Mus. not less than three academic years earlier, (b) have completed the Intermediate Examination in Music not less than two academic years earlier, and (c) have obtained approval of candidature for the B.Mus. Examination. Candidates who have obtained the B.Mus. Degree under the old regulations will not be permitted to proceed to the degree under the Revised Regulations.

(In 1954 only)

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the second Monday in December.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the B.Mus. Examination during the period May-June in the year preceding the examination and not later than 5 July in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 5 July, applications may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 7 September in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 26 August. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 30 September and the candidate list will be closed on 7 October. No entry can be accepted after the candidate list has been closed.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

(For Examinations in and after 1955)

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the second Monday after 28 June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the B.Mus. Examination during the period December-January in the year preceding the examination and not later than 5 February in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 5 February, applications may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 28 February in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 17 February. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 24 March and the candidate list will be closed on 31 March. No entry can be accepted after the candidate list has been closed.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole examination	6	6

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 November (for examination in 1954) nor later than 1 June (for examinations in and after 1955) may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION AND SYLLABUSES

1. The examination will consist of five written papers, an oral examination and a practical test, as follows :—

Written Examination

1. Harmony and Counterpoint (one paper).

Tests will be given for voices (which may include the setting of words) in 4 or 5 parts, and for strings or organ in 4 or 5 parts, in various styles.

2. Fugue, including canonic writing (one paper).

Note.—There will not be a separate question on Canon, but an episode showing imitative writing should form part of the work.

3. Orchestration (one paper).

Candidates will be expected :—

(a) to arrange a given piece of a simple character, written for piano, or for a solo instrument with piano accompaniment, for a *small* orchestra with (if thought desirable) discreet use of the piano ;

(b) to reduce a piece written for full orchestra for performance by a small specified orchestra.

4. History of Music (one paper) : special prescribed period.

5. Special Subject (one paper). (**Candidates must state, when applying for approval of candidature, which subjects and options they select**) :—

An intensive study of any **two** of the following :—

(1) The relation of the growth of instrumental technique to, and the development of (a) orchestral music, **or** (b) keyboard music, **or** (c) string music.

(2) **Either** (a) Passion Music **or** (b) The Bach Cantata, **or** (c) The Bach Choral Prelude.

Note.—Passion Music, the Bach Cantata and the Bach Choral Prelude should also be considered in their historical aspect.

(3) **Either** (a) 19th-century development of the Lied, **or** (b) the Tudor madrigalists and the Lutenist song-writers.

(4) **Either** (a) Wagner's operatic theory and practice, **or** (b) Italian opera from Rossini to Puccini.

(5) Ballet Music.

(6) The development of the Concerto.

Oral Examination

(a) The critical analysis of two prescribed works, such as an opera and an independent overture, or a symphony and a cantata, representing two different periods or phases in the art of music.

(b) Questions on the instruments found in a normal symphony orchestra, their chief characteristics and employment.

The use of a musical instrument will be allowed during the oral examination only by special permission of the examiners.

Practical Test

Practical test of ability to play on the piano from an orchestral score previously studied for 20 minutes ; to transpose (not more than a tone up or down) a chorus and to supply correct harmonic support ; to play at sight a vocal score with G and F clefs or a simple movement of a string quartet.

(*Note.*—The chorus chosen will be of a simple character, in open score using G and F clef only.)

2. All answers to examination questions shall be written in English unless instructions are given to the contrary.

3. Candidates will not be approved by the examiners unless they have shown a competent knowledge in all the subjects of the written, oral and practical examinations.

4. A candidate who has passed Part I only of the B.Mus. Examination under the Old Regulations may enter for the B.Mus. Examination under the present regulations, but will not be exempted from any part of the examination.

Special Prescribed Periods and Recommended Works

Candidates will be expected to show a first-hand acquaintance with representative musical scores ; they should also have a thorough knowledge of the music and musicians of the period selected, such as may be gained from the standard biographical and critical works dealing with that period.

1954. Paper 4, History of Music : The Viennese Period. Recommended work : *The Oxford History of Music*, Vol. V. Oral Examination : Wagner : *Siegfried Idyll* and *Meister-singer Overture* ; Dvorak : *Stabat Mater* (vocal score).
1955. Paper 4, History of Music : The period 1800-1850. Recommended work : *The Oxford History of Music*, Vol. VI. Oral Examination : Elgar : *Dream of Gerontius* ; Sibelius : *Symphony No. 3*.
- 1956.* Paper 4, History of Music :—The period 1900-1930. Oral Examination :—Beethoven : *Fidelio*
Holst : *Orchestral Suite, The Planets*.

*Provisional only ; subject to confirmation in September 1954.

TIME TABLE

The examination will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 3 January (for examinations in 1954) and on 15 August (for examinations in and after 1955) the External Registrar will publish a list of successful candidates, arranged in alphabetical order in each of the three categories First Class Honours, Second Class Honours, and Pass.
2. A copy of the Pass List will be sent to each successful candidate, and an individual communication to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for the B.Mus. Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

- (1) Candidates who have completed papers 1, 2 and 3 are eligible to apply for an Aegrotat Degree, but they will be required to attend, on a date to be decided, for (i) the practical test, in which they must satisfy the examiners, and (ii) an oral examination on the subject-matter of the remaining papers.
- (2) Applications from or on behalf of students must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.
- (3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.
- (4) An Aegrotat Degree will be awarded without distinction or class.
- (5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The Reports of the examiners and the Pass Lists shall be laid before the Senate for approval in January in the case of the December examination and in October in the case of the July examination.

2. A Diploma for the Degree of B.Mus. under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

B.MUS. EXAMINATION (OLD REGULATIONS), PART II

Candidates who, in or before 1951, have passed Part I only of the B.Mus. Examination, under the old regulations then in force, will be permitted to enter for Part II until further notice.

QUALIFICATIONS FOR ADMISSION

To be admitted to Part II of the B.Mus. Examination each candidate must (a) have matriculated not less than three academic years previously ; (b) have passed Part I of the B.Mus. Examination (Old Regulations) ; and (c) have been registered and have obtained approval of candidature as an External Student preparing for Part II at least six months before the date of the submission of his Musical Exercise.

DATE OF EXAMINATION

Musical Exercises for Part II shall be submitted by 1 February or 1 October in each year.

APPROVAL OF CANDIDATURE

For the submission of the Musical Exercise by 1 February, candidates should apply for approval of candidature for the B.Mus. Examination, Part II, during the period July-August of the year preceding the examination and not later than 1 September in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 1 September, applications may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 1 January in the year of the examination.

For the submission of the Musical Exercise by 1 October, candidates should apply for approval of candidature during the period February-March in the year of the examination and not later than 1 April in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 1 April, applications may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 1 September in the year of the examination.

ENTRY TO EXAMINATION

For candidates submitting their Musical Exercise by 1 February, the candidate list will be opened on 18 December. Each candidate must send with his Musical Exercise a special entry form, which may be obtained on application to the External Registrar, the prescribed fee and the declaration specified in the Scheme of Examination below. Entry forms will not be despatched by post from the University after 25 January, and the candidate list will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

For candidates submitting their Musical Exercise by 1 October, the candidate list will be opened on 20 August. Entry forms will not be despatched by post from the University after 24 September and the candidate list will be closed on 1 October. No entry can be accepted after the candidate list has been closed.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Part II (first entry or re-examination)	4	4

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

SCHEME OF EXAMINATION AND SYLLABUSES

No candidate will be admitted to Part II who has not passed Part I.
No exemptions are granted from Part II.

Part II

Every candidate will be required to submit a Musical Exercise of such length as to occupy from 20 to 40 minutes in performance. It must comprise **either** :—

(a) The following group :—

- (1) First movement of either a String Quartet or a Pianoforte Trio.
- (2) A Vocal work (Part-Song, Madrigal, Anthem or Motet) with or without accompaniment.
- (3) A pianoforte piece in definite form, excluding Sonata Form.
- (4) A song with pianoforte accompaniment.

or (b) A string quartet in four movements as follows :—

- (1) In Sonata form.
- (2) A Slow Movement in either simple Ternary, abridged Sonata or old Rondo form ; or a set of Variations.
- (3) A Minuet or Scherzo and Trio.
- (4) In Sonata Rondo form.

(The candidate may reverse the order of (2) and (3) if desired.)

The work must reveal a competent knowledge of design and of the development of thematic material, facility in harmony and counter-point. No Exercise will be regarded as sufficient solely on the ground that it is free from technical errors.

The Exercise must be clearly and legibly written in the proper clefs, paginated and securely bound and lettered up the back with the short title of the work, the degree and year of entry. The name of the candidate must not appear anywhere on the Exercise.

The candidate must make a solemn declaration that the exercise is entirely his own unaided composition.

A candidate whose exercise has been rejected shall not be permitted on re-entry to submit the rejected exercise in an amended form unless the examiners have so recommended. An unsuccessful candidate will be required on re-entry to state whether the exercise which he submits has been previously submitted or not.

NOTIFICATION OF RESULT

Part II

1. The examiners shall report upon each case separately and after the report of the examiners has been received the External Registrar shall publish a list of candidates who have passed.

2. The Musical Exercise of each candidate who has passed Part II of the B.Mus. Examination will be placed in the University Library.

AWARD OF DIPLOMA

1. A diploma for the Degree of B.Mus. under the seal of the University shall be delivered to each successful candidate.

2. A notification of the date of the Presentation Ceremony, which takes place in May of each year will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

DOCTOR OF PHILOSOPHY

Regulations for the Degree of Ph.D. are contained in a separate pamphlet which may be obtained on application to the External Registrar.

DOCTOR OF MUSIC

1. The examination for the D.Mus. Degree shall consist of a written and an oral examination, and of a musical exercise.

2. No candidate shall be admitted to either part of this examination until after the expiration of two academic years from the time of his obtaining the Degree of B.Mus. in this University. (In exceptional circumstances this interval may be reduced.)

3. Every candidate must apply to the External Registrar by 29 October for an entry form, which must be returned by 5 November, accompanied by the candidate's fee.

4. Every candidate entering for the first time must pay a fee of twenty guineas (£21), which shall include a first entry to the written examination and a first presentation of a Musical Exercise. If a candidate withdraws his name, or fails to present himself at the written examination, or fails to pass it, the fee shall not be returned to him; but he shall be permitted to present himself for any subsequent D.Mus. written examination on payment of a fee of £10 10s.

5. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

6. No use of any musical instrument will be allowed during the examination unless specially directed by the examiners.

Written Examination

7. The written examination shall take place once in each year, and shall commence on the second Monday in December.

8. The written examination shall be conducted by means of printed papers. It shall extend over two days and a half.

9. Candidates shall not be approved by the examiners unless they have shown a competent knowledge in all the subjects of the examination.

10. On 3 January the External Registrar will publish a list of the candidates who have passed, arranged in alphabetical order.

11. The following are the subjects of the written examination :—

Harmony and Composition

[One paper.] Harmony and Composition up to eight parts, vocal and instrumental.

Counterpoint and Canon

[One paper.] Counterpoint up to eight real parts (free), Double and Triple Counterpoint and other contrapuntal devices ; Canon up to four parts, with or without accompaniment.

Fugue

[One paper.] The composition of a Fugue in not more than five parts on a given subject, vocal or instrumental.

Orchestration

[One paper.] The scoring of given or original passages for full orchestra or for special combinations of instruments.

History of Music

[One paper.] A general knowledge of the History of Music, and especially of the most important forms of the art. A critical knowledge in some detail of the great standard compositions.

Oral Examination

12. After the written examination, the candidate shall be required to present himself at such a place in the University as the examiners direct, upon such day or days as may be notified to him, to be further tested with reference to his knowledge of standard works.

13. If the examiners consider that the candidate has reached the required standard at the oral examination, but that he has not reached the required standard at the written examination, they may recommend that the candidate be exempt, on re-entry, from a further oral examination.

Musical Exercise

14. Any person who has passed the written examination may send in a Musical Exercise at any time during the six weeks preceding 1 March or 1 October. For this purpose he shall obtain from the External Registrar the appropriate entry form.

15. The Musical Exercise must be of such length as to occupy at least 40 minutes in performance.

16. The Exercise must be clearly and legibly written in the proper clefs, paginated and securely bound and lettered up the back with the short title of the work, the degree and year of entry. The name of the candidate must not appear anywhere on the Exercise. Candidates are requested, in sending in their exercises, to write on *each page* all the key signatures, to state the keys of Clarinets, Horns, and Trumpets in the usual way, and to bracket their groups as a help to the eye.

17. The Exercise must be *either* :—

(a) A work for Chorus and Full Orchestra with or without solo voices, *or*

(b) A Symphony for Full Orchestra in the usual four movements.

18. The Exercise will be judged solely on the grounds of artistic value.

19. The work submitted as a Musical Exercise for a degree in this University must not have been previously submitted as a Musical Exercise for a degree in another University. Nevertheless a candidate shall not be precluded from incorporating work which he has already submitted with a view to a degree in this or any other University in a Musical Exercise covering a wider field, provided that he shall indicate on his entry form and also on his exercise any work which has been so incorporated.

20. The candidate will be required to make a solemn declaration that the exercise is entirely his own unaided composition.

21. A candidate whose exercise has been rejected shall not be permitted on re-entry to submit the rejected exercise in an amended form unless the examiners have so recommended, and will be required on re-entry to state whether the exercise which he submits has been previously submitted or not.

22. Any candidate who has been rejected by the examiners on his exercise may again at any time send in an exercise upon payment of a fee of £10 10s.

23. The examiners shall report to the Senate upon each exercise separately, and after the report of the examiners shall have been approved by the Senate, the External Registrar shall publish a list of the candidates who have passed. Candidates are warned that at least two months will normally elapse between the submission of the Exercise and the publication of the result, and that during vacations this interval may be considerably increased.

24. The Musical Exercise of each candidate who has passed will be placed in the University Library.

25. A diploma for the Degree of D.Mus. under the seal of the University shall be delivered to each successful candidate. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

UNIVERSITY OF LONDON



REGULATIONS FOR THE FIRST MEDICAL EXAMINATION for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examination.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

IMPORTANT NOTICE

Many students take the First Examination for Medical Degrees for External Students in order to obtain a qualification which may admit them to one of the Medical Schools of the University as Internal Students.

Any student, however, who is contemplating entry upon a course of study for a Degree in Medicine as an Internal Student of the University should obtain information from the Medical School which he hopes to enter about the qualifications required and the conditions of entry, and should not seek to pass the First Examination for Medical Degrees as an External Student unless he has been advised by the Medical School to do so.

INTRODUCTORY NOTE

The University confers the following Degrees in the Faculty of Medicine :—

- Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.).
- Doctor of Medicine (M.D.).
- Master of Surgery (M.S.).
- Doctor of Philosophy (Ph.D.), in non-clinical subjects only.
- Bachelor of Dental Surgery (B.D.S.).
- Bachelor of Pharmacy (B.Pharm.).

Reference should be made to separate regulations relating to the Second and Third (M.B., B.S.) Medical Examinations, the M.D. and M.S. Degrees, the Ph.D. Degree, the Second and Third (B.D.S.) Examinations in Dental Surgery, and the Intermediate and Final Examinations for the B.Pharm. Degree.

After 1 January 1953 a student on whom the Senate confers the Degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.) will not be entitled to full registration by the General Medical Council until he has held to the satisfaction of the University intern posts for a period of twelve months, as follows:—

Six months in Medicine and six months in Surgery or six months in Obstetrics and Gynaecology as an alternative to either Medicine or Surgery.

in accordance with Section 2 of the Medical Act, 1950. A list of approved intern posts is published by the General Medical Council.

Candidates for the M.B., B.S. Degrees as External Students are required normally :—

(1) To have satisfied the minimum University and Faculty entrance requirements and to have been registered as External Students not less than five and a half years previously.

(2) To have passed subsequent examinations as follows :—

- (a) *First Examination for Medical Degrees* (Inorganic Chemistry, Physics (including Mechanics), and General Biology), not less than nine months after registration as an External Student.
- (b) *Second Examination for Medical Degrees* (Human Anatomy, Physiology and Pharmacology), not less than 18 months after passing the First Examination.

- (c) *Third Examination for Medical Degrees, or M.B., B.S. Examination* (Medicine, Surgery, Obstetrics and Gynaecology, Pathology), not less than three years after passing the Second Examination.

(3) To have been engaged in their professional studies during five and a half years subsequent to registration as an External Student, and to have been engaged in such studies for four and a half years subsequent to their passing the First Examination for Medical Degrees, at one or more of the Medical Institutions or Schools recognized by this University for the purpose ; one year, at least, of the four and a half to have been spent in one or more of the recognized Institutions or Schools in the United Kingdom.

Candidates for the Degree of Bachelor of Dental Surgery as External Students are required :—

(1) To have satisfied the minimum University and Faculty entrance requirements and to have been registered as External Students not less than five and a half years previously.

(2) To have passed subsequent examinations as follows :—

(a) *First Examination for Medical Degrees* (see above).

(b) *Second Examination in Dental Surgery :*

Anatomy (General and Special) and Physiology not less than twelve months after passing the First Examination for Medical Degrees.

(c) *Third Examination in Dental Surgery :*

Part I—Prosthetic Dentistry not less than twelve months after passing the Second Examination in Dental Surgery.

Part II—Medicine, Surgery, Pathology and Bacteriology, Pharmacology, and Therapeutics not less than 28 months after passing the Second Examination in Dental Surgery.

Part III—Dental Surgery (including Operative Dental Surgery and Special Pathology) and Orthodontics not less than 40 months after passing the Second Examination in Dental Surgery.

(3) To have been engaged in their professional studies during five and a half years subsequent to registering as External Students and for four and a half years subsequent to their passing the First Examination for Medical Degrees, at one or more of the Institutions or Schools recognized by the University for the purpose.

The word “ Year ” in these regulations when used without limitation always means a calendar year.

By the term “ Academic Year ” is ordinarily meant the period intervening between any examination and an examination of the next higher grade in the following year, and may be either *more* or *less* than a calendar year.

FIRST EXAMINATION FOR MEDICAL DEGREES

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have satisfied minimum University and Faculty entrance requirements and (b) have been registered as an External Student preparing for the Degrees of M.B., B.S. or B.D.S.

Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced

a course of study. Students for the June examination should normally apply for registration in the period October to December of the year preceding the examination, and not later than 25 February. Students for the December examination should normally apply for registration in the period January to March preceding the examination, and not later than 8 October.

FACULTY REQUIREMENTS

A candidate who has matriculated by means of a General Certificate of Education will be required to have passed in Chemistry and Physics at Ordinary or Advanced Level.

DATE OF EXAMINATION

The examination will take place twice in each year, commencing on the fourth Monday in June, and on the first Monday following 5 December.

The examination held in December will be open normally only to the following candidates :—

- (1) Candidates who have been referred in one subject at a previous examination.
- (2) Candidates exempted from two subjects of the examination.
- (3) Candidates who produce a medical certificate that they were prevented by ill-health from sitting for the examination in the previous June.

ENTRY TO EXAMINATION

The candidate list for the June examination will be opened on 11 February. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and send in their completed entry as early as possible. Entry forms will not be despatched by post from the University after 18 March and the candidate list will be closed on 25 March. No entry can be accepted after the candidate list has been closed.

The candidate list for the December examination will be opened on 27 September. Entry forms will not be despatched by post from the University after 1 November and the candidate list will be closed on 8 November. No entry can be accepted after the candidate list has been closed.

Notice of intention to take the written part of the examination at a Provincial Centre must be given at the time of entry. All candidates are required to present themselves in London for the practical examinations.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

						£	s.
Whole examination	..	..	..	..	..	6	6
Referred subject	..	..	..	..	..	2	2
<i>Exemption in virtue of another examination :—</i>							
Complete exemption	.....	..	..	..	..	no	fee
Partial exemption (per subject taken)	..	..	..	..	..	2	2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the June examination after the last date of entry but not later than June 1 may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix). In the case of the December examination no refund can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION

1. The examination will include :—

Inorganic Chemistry	2 three-hour papers and a practical examination not exceeding three hours ;
Physics (including Mechanics)	2 three-hour papers and a practical examination not exceeding three hours ;
General Biology	2 three-hour papers and a practical examination not exceeding six hours.

2. The examiners shall be at liberty to test any candidate by means of oral questions.

3. Candidates will not be approved by the examiners unless they have shown (on one and the same occasion except as provided under Exemptions below) a competent knowledge in each of the three subjects, nor unless they have satisfied the examiners in the practical as well as in the written part of the examination in each subject.

4. All answers to examination questions shall be written in English unless instructions are given to the contrary.

5. A candidate who has passed the First Examination for Medical Degrees will not be permitted to re-enter.

REFERENCE

1. A candidate who enters for the whole examination on one and the same occasion, but who fails to reach the required standard in one subject only, may be referred, i.e., he may be permitted to re-present himself for examination in that subject alone at one or more subsequent First Medical Examinations.

2. The examiners will recommend that a candidate be referred only if his failure in one subject is not serious and if his performance in the remaining subjects is reasonably good.

3. A candidate who has completed the First Medical Examination after having been referred in one subject will be deemed for all purposes to have passed the examination in question on the date of completion.

EXEMPTIONS

1. *In virtue of Higher School Certificates and the General Certificate of Education :—*

(a) A candidate who (i) holds a Certificate or Certificates awarded on a Higher School Examination recognized by the Ministry of Education as an approved second examination in Secondary Schools and (ii) is qualified to proceed to the External First Examination for Medical Degrees may apply for exemption in respect of any subject or subjects endorsed on his Higher School Certificate or Certificates on the Principal (Main) or Additional Subject standard provided that the subjects correspond to those which may be offered at the First Examination for Medical Degrees.

A candidate who has not qualified for the award of a Higher School Certificate but who has been permitted to count successes gained in 1949 and 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirements, may apply for exemption in corresponding subjects of the First Medical Examination in respect of these two subjects.

(b) A candidate who (i) holds a General Certificate or Certificates of Education awarded by one of the approved University Examining Bodies and (ii) is qualified to proceed to the First Examination for Medical Degrees, may apply for exemption at that examination in any subject or subjects passed at the Advanced Level provided that the subject(s) correspond to those which may be offered at the First Examination for Medical Degrees. **In and after December 1954 a candidate applying for exemption in virtue of a General Certificate of Education must have offered not less than three subjects at Advanced Level on the same occasion, and have obtained a pass at Advanced Level in two of them and at either Advanced or Ordinary Level in the third.**

(c) From 1 September 1952 all fees payable in respect of complete or partial exemption are abolished. Candidates who are required to take part of the examination to complete a partial exemption will be required to pay entry fees for the subject or subjects which they are required to take, but no additional fee for exemption from the remaining part of the examination. Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the First Medical Examination will be set off against the entry fee at the time of entry for the Second Medical or Second Dental Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the First Medical Examination, and who paid the six guinea fee to include a first entry in one or more subjects.

(d) A candidate who is required to pass in two subjects in order to complete his First Medical qualification must satisfy the examiners in both subjects at one and the same examination, and if he is only partially successful he shall be required on re-entry to offer both completing subjects again.

(e) A candidate may, if he so desires, complete his exemption qualification by passing in the required additional subjects at a subsequent Higher School Examination or General Certificate of Education (Advanced Level) Examination, provided the subjects offered conform to the regulations. In this case all the subjects required must be passed at one and the same Higher School Examination or General Certificate of Education (Advanced Level) Examination.

(f) For exemption from General Biology candidates will normally be required to have passed in both Botany *and* Zoology at Principal Standard on a Higher School Certificate or at Advanced Level at the General Certificate of Education Examination. Biology will only be accepted for this purpose at Principal Standard or Advanced Level at the *London* Higher School Certificate (in and after 1943) or General Certificate of Education Examination (up to and including 1953 only). For an experimental period of five years from October 1953 only, exemption from General Biology will be granted to a candidate who has obtained a Higher School Certificate with passes obtained on the same occasion in Zoology at Principal (Main) subject standard and Botany at Subsidiary standard on the Principal (Main) subject syllabus, or to a candidate who entered for examination on the same occasion in Botany and Zoology at Advanced Level in the General Certificate

of Education Examination and who was awarded a pass at Advanced Level in Zoology and a pass at Ordinary Level in Botany.

(g) No certificate will be issued to candidates in respect of such exemption, but a notification will be sent to duly qualified candidates at their request when the exemption has been completed, stating that they are qualified to proceed to the Second Examination for Medical Degrees or the Second Examination in Dental Surgery on complying with the Regulations in all respects.

2. *In virtue of other examinations of this University :—*

(i) Candidates who have passed Intermediate Arts, Pharmacy, Science or Agriculture with Chemistry, or Physics, or Botany and Zoology, or Biology in and after 1949, will be exempted from examination in the subjects in which they have passed. Candidates who have passed the Intermediate Examination in Household and Social Science will be exempted from the First Examination for Medical Degrees.

(ii) Candidates who have passed the B.Sc. Examination with Physics, or Chemistry, or Botany and Zoology, will be exempted from examination in the subjects in which they have passed.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. A list of successful candidates, in alphabetical order, will be published on 14 August for the June examination and on 7 January for the December examination.

2. A copy of this Pass List will be sent to each successful candidate ; and an individual notification will be sent to each unsuccessful candidate.

3. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October for the June examination and in January for the December examination.

4. Certificates of having passed the examination will not be issued except to qualified students applying for such certificates.

5. Each successful candidate will receive a Detailed Report on his results in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass.

6. Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—

D—Failure ; E—Bad Failure.

7. Failure in a subject which includes a practical or oral examination indicates failure in the subject as a whole and no further information can be given regarding the candidate's performance in the various parts of the examination.

8. Detailed Result Reports will be sent to successful candidates from one to two months after the publication of the ordinary Pass List, but will be sent to unsuccessful candidates at the time when they are notified of the result of the examination.

9. Educational institutions in receipt of annual grants from public funds may apply for a statement of the detailed results of their candidates ; such applications must be accompanied by a list of the candidates' names, the name of the examination and the date at which it was taken. The results cannot be communicated until about two months after the publication of the Pass List and each institution will have communicated to it the results of those candidates only who are registered as pursuing a course of study at that institution.

SYLLABUSES

Inorganic Chemistry

The whole subject is to be treated in an elementary manner with particular regard to the subsequent work of the candidate.

The syllabus includes the subjects of the Ordinary Level of the General Certificate of Education of the University of London with the addition of the following :—

Physical Chemistry

Atomic theory. Avogadro's law. Equivalent, atomic and molecular weights and their determination. Valency. Formulae. Equations.

Classification of the elements.

Solution and such properties of liquids as diffusion, osmotic pressure, freezing and boiling points, electrical conductivity.

Electrolysis. Ionization. Hydrogen ion concentration. Relative strengths of acids and bases.

Speed and reaction and the law of mass action. Hydrolysis in aqueous solution. Thermal dissociation.

Catalysis. The colloidal state. Combustion. Heat of combustion and of formation. Heat of solution.

Simple calculations based on the foregoing.

Descriptive Chemistry

The preparation and physical and chemical properties of the following :—

Hydrogen and Oxygen : Ozone. Water. Hydrogen peroxide. Oxides.

Chlorine, Bromine, and Iodine ; their hydrogen acids and their salts. Hypochlorous acid and hypochlorites. Chlorates. Iodates.

Sulphur and its compounds with hydrogen and oxygen. Sulphides. Sulphurous and sulphuric acids and their salts. Sodium thiosulphate.

Nitrogen. Ammonia and the ammonium salts. The oxides of nitrogen. Nitrous and nitric acids and their salts. The composition of air.

Phosphorus, its hydride, chlorides, tri- and pentoxides. Hypophosphites, phosphorous acid. Phosphoric acid and its salts.

Arsenic, its hydride, chloride, oxides, and sulphide ; arsenites and arsenates.

Carbon. Methane. Oxides of carbon. Carbonic acid and its salts. Carbon disulphide. Coal gas.

Silicic acid. Boric acid. Borax.

Chromic oxide and chromium trioxide : the chromates and dichromates.

Manganese dioxide ; Potassium permanganate.

The following metals and their more important compounds :—

Sodium ; potassium ; copper ; silver ; magnesium ; calcium ; zinc ; barium ; mercury ; iron ; aluminium ; lead ; antimony ; bismuth.

A knowledge of metallurgical processes will not be required.

Practical Work

The preparation of common inorganic compounds.

The determination of : Vapour density by Meyer's method; molecular weight by the freezing-point and boiling-point methods ; the solubility of a solid and of a gas ; partition coefficient ; pH of a solution by indicators.

Quantitative analyses.

Gravimetric estimation of a sulphate and a phosphate.

Direct and indirect estimation by means of a standard acid or alkali.

Estimation of iron, oxalates, and hydrogen peroxide by potassium permanganate.

Estimation of a chloride by silver nitrate and potassium chromate and by Volhard's thiocyanate method.

Estimations by means of iodine and sodium thiosulphate, namely free halogens, sulphur dioxide, hypochlorites, and permanganates.

Estimation of oxygen, carbon dioxide, and nitrogen in a mixture of these gases.

Qualitative analyses.

Identification of a single element or of a single compound selected from the following :—Oxides, hydroxides, sulphides, sulphites, sulphates, thiosulphates, chlorides, bromides, iodides, nitrites, nitrates, arsenites, phosphates, borates, carbonates, chromates of the above metals or of ammonium, hydrogen, arsenic.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge ; Centrifuge tubes ; Water bath with cover pierced to take centrifuge tubes ; Two long dropping pipettes ; Micro burners ; Wash bottles 100 cc. Polythene squeezing type ; Crucibles 25 mm. and 15 mm ; Spotting tiles (porcelain) and microscope slides ; Assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in., and block to hold these and centrifuge tubes ; Rack for dropping pipettes ; Long thin spatula ; Whatman papers (No. 120), 2 in. squares ; Small porcelain dish ; Forceps and tube holders ; Anti-bumping tubes to fit in centrifuge tubes ; Small conical flask 10 ml. ; Pyrex tube fitted for testing evolved gases ; Reagents ; Strong acids in Jena T.K. bottles ; other common reagents in bottles fitted with dropping pipettes.

Candidates are permitted to bring for use in the practical examination any book or books they desire, including their own laboratory note-books, and must provide their own platinum foil and wire.

Candidates will be required to write out a clear account of their practical work, accurately describing the nature of the processes employed, and where possible representing by equations the chemical changes involved. They will be further required to bring to the practical examination, for inspection by the examiners, their practical note-books which must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Physics (including Mechanics)

The whole subject is to be treated in an elementary manner, the mathematical development in no case extending beyond a knowledge of quadratic equations and elementary trigonometry.

General Physics including Mechanics.—Measurement of length, area, volume and mass in the British and metric systems. Velocity, acceleration, momentum, force, work, energy, power. Conservation of energy. Friction. Simple machines. Laws of pressure in liquids. Characteristic properties of the solid, liquid and gaseous states of matter. Elasticity. Surface tension. Viscosity of liquids. Diffusion in liquids and gases. Osmosis.

Sound.—Production and transmission of sound. Noises and musical notes. Velocity of sound in air and effect of change of temperature. Loudness, pitch and quality of musical notes, and the physical characters of the waves that determine them. Vibration of stretched strings and air columns. Beats. Resonance.

Light.—Rectilinear propagation of light. Laws of reflection and refraction. Formation of images by plane and spherical surfaces, and by thin lenses. The eye as an optical instrument. Elementary theory of vision. Long and short sight and astigmatism and their correction by spectacles. Action of prisms upon light. Spectroscope. Emission and absorption spectra. Infra-red and ultra-violet radiation. Achromatic combinations of prisms and lenses. Instruments: e.g., the telescope, microscope and simple ophthalmoscope. Photometry. Elementary outline of the wave theory of light. Polarization.

Heat.—Temperature and its measurement. Thermal expansion. Quantity of heat. Specific heat. Change of state. Determination of melting-points and boiling-points. Latent heat. Vapour pressure. Hygrometry. Conduction, convection, and radiation. Ventilation. Relation between heat and work. Refrigeration.

Magnetism and Electricity.—Elementary properties of magnets. Lines of magnetic force. Simple phenomena of static electricity. The electrophorus and Wimshurst machine. Electric potential and capacity. Condensers. Electric currents. Electrolysis. Primary and secondary cells. Magnetic field of a current. Galvanometers. Ohm's law. Definition and measurement of current strength and of electromotive force. Absolute and practical electrical units. Resistance and its measurement. Heating effects of currents. Electrical power. Board of Trade unit of energy. Thermo-electric couples. Electromagnetic induction. The telephone and microphone. The induction coil. Elementary treatment of the production, properties and measurement of alternating currents.

Ionization of gases. Electric discharge in rarefied gases. Cathode rays and X-rays. Thermionic emission in reference to rectifiers and amplifiers. Electrical oscillations. Radio-activity and the nature of radioactive change. Properties of α , β and γ rays.

Practical Work

[The following scheme is not exhaustive, and is intended merely to show the general nature of the exercises at the practical examination. The examiners are not precluded from setting other exercises and practical problems illustrative of the principles set forth in the syllabus.]

Use of vernier, linear and angular. Determination of areas and volumes by measurement of linear dimensions. Measurement of a period of oscillation. Use of the balance weighing to one milligramme. Determination of volumes by weighing in air and water. Densities of solids, powders and liquids. Use of the common hydrometer. Verification of Boyle's law. Reading the barometer.

Comparison of frequencies of tuning forks by smoked-glass method. Determination of velocity of sound by resonance. Use of sonometer.

Use of simple photometer. Verification of laws of reflection and refraction, tracing paths of rays. Focal lengths of spherical mirrors and thin lenses. Arrangement of two lenses to make simple forms of telescope, microscope, and projection lantern. Arrangement of a slit, lenses and prism to produce a spectrum. Use of spectroscope. Determination of refractive indices of solids and liquids.

Use of thermometers, and testing fixed points. Air thermometers. Determination of melting-points and boiling-points. Simple methods of determining specific heat and latent heat. Measurement of pressure of saturated vapours. Hygrometry.

Investigation of the magnetic field in the neighbourhood of a magnet and of an electric current. Gold-leaf electroscope and its use to detect ionizing radiations. Use of galvanometers, ammeters and voltmeters. Measurement by resistance by substitution and by Wheatstone's bridge. Use of simple potentiometer. Internal resistance of a voltaic cell. Measurement of conductivity of electrolytes. Measurement of rate of heat development by a current. Simple experiments on induced currents.

Candidates will be required to bring to the practical examination their *original* practical note-books for inspection by the examiners. These practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

General Biology

The whole subject is to be treated in an elementary manner, with particular regard to the inculcation of general biological principles and to the subsequent work of the candidate.

It should be noted that an equal amount of time is given to the written and practical examinations, and that equal importance is attached to the candidate's performance in each.

Nature of living organisms.

The elements of the gross organization, physiology, and life history of the frog. Metabolism, respiration, secretion, excretion, regulation.

[A knowledge of the musculature and of the *details* of the skull of the frog will not be required.]

Protoplasm ; its physical and chemical characters, irritability, movements and growth. Cellular structure. Cell division. The elements of the histology of the Vertebrata.

The structure, physiology, and life-history of :—*Chlamydomonas*, *Pleurococcus* ; *Pandorina*, *Eudorina*, *Volvox* ; *Pythium* (or *Peronospora*), *Mucor*, *Saccharomyces* ; *Bacteria* ; *Amoeba*, *Monocystis*, *Paramecium*.

Holozoic, holophytic, and saprophytic methods of nutrition, the energy changes connected with them, and the parts played by organisms in the economy of nature. Parasitism. The differences between animals and plants.

The elements of the structure, physiology, and life-history of *Spirogyra*, *Fucus*, *Dryopteris*, and the flowering plant. The structure of a flower (e.g., *Lilium*, *Pisum*, *Ranunculus*), and the functions of its organs ; pollination. Fertilization and the formation of embryo, seed and fruit. Germination and the conditions under which it occurs. Reserve materials, and their storage by flowering plants.

The elements of the morphology, physiology, and life-history of *Hydra*, the tape worm, the earthworm, the cockroach, the dogfish and the rabbit, considered comparatively. [The skull of the dog to be substituted for that of the rabbit.]

Soma and germ cells. Sexual and asexual reproduction. Differentiation of gametes. Parthenogenesis. Maturation. Fertilization.

The elements of the embryology of Chordata, including :—(a) The modes of cleavage and of the origin of the germ layers in *Amphioxus*, the fowl and rabbit ; (b) the formation of the embryonic membranes in the fowl and rabbit ; (c) the outlines of organogeny (as revealed by a study of the fowl up to the end of the third day of incubation, or of the frog up to a morphologically corresponding stage) ; (d) the modes of nutrition during development.

The principal facts of heredity, including a knowledge of simple Mendelian experiments, and of variation. The evidence for evolution, and an outline of the principle theories of the mode in which it takes place.

Practical Work

The above syllabus is to form the basis of the laboratory work by candidates and of the practical examination.

Candidates will be required to bring to the practical examination their *original* practical note-books for inspection by the examiners. These practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates will be expected to bring their own instruments for use at the practical examination—razors, razor strop, forceps (fine and coarse), scalpels, scissors (fine and coarse), section lifters, seekers, mounted needles and hand lenses.

UNIVERSITY OF LONDON



REGULATIONS

FOR THE

Second Examination

AND

Third (M.B., B.S.) Examination

FOR

MEDICAL DEGREES

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

The University confers the following Degrees in the Faculty of Medicine :—

- Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.).
- Doctor of Medicine (M.D.).
- Master of Surgery (M.S.).
- Doctor of Philosophy (Ph.D.), in non-clinical subjects only.
- Bachelor of Dental Surgery (B.D.S.).
- Bachelor of Pharmacy (B.Pharm.).

Regulations for the First Examination for Medical Degrees, for the M.D. and M.S. Degrees, for the Ph.D. Degree, for the B.D.S. and for the B.Pharm. Degrees are contained in separate pamphlets.

After 1 January 1953 a student on whom the Senate confers the Degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.) will not be entitled to full registration by the General Medical Council until he has held to the satisfaction of the University intern posts for a period of twelve months, as follows :—

Six months in Medicine and six months in Surgery or six months in Obstetrics and Gynaecology as an alternative to either Medicine or Surgery

in accordance with Section 2 of the Medical Act, 1950. A list of approved intern posts is published by the General Medical Council.

Candidates for the M.B., B.S. Degrees as External Students are required normally :—

- (1) to have satisfied the minimum University and Faculty entrance requirements, and to have been registered as External Students not less than five and a half years previously.
- (2) To have passed subsequent examinations as follows :—
 - (a) *First Examination for Medical Degrees* (see separate pamphlet).
 - (b) *Second Examination for Medical Degrees* (Human Anatomy, Physiology and Pharmacology), not less than 18 months after passing the First Examination.
 - (c) *Third (M.B., B.S.) Examination for Medical Degrees*, (Medicine, Surgery, Obstetrics and Gynaecology, and Pathology), not less than three years after passing the Second Examination.
- (3) To have been engaged in their professional studies during five and a half years subsequent to registration as External Students and to have been engaged in such studies for four and a half years subsequent to their passing the First Examination for Medical Degrees, at one or more of the Medical Institutions or Schools recognized by this University for the purpose, one year, at least, of the four and a half to have been spent in one or more of the recognized Institutions or Schools in the United Kingdom.

FACULTY REQUIREMENTS

A candidate who has matriculated by means of a General Certificate of Education will be required to have passed in Chemistry and Physics at Ordinary or Advanced Level.

EXEMPTIONS

1. Candidates who have passed B.Sc. Special in Chemistry, or B.Sc. Special in Physiology with Chemistry as their subsidiary subject in and after 1934, or B.Sc. General with both Chemistry and Physiology, or the B.Sc. (Household and Social Science) Examination of this University, and have obtained first or second class marks in Chemistry

at any of the above examinations will be exempted from the course of study and examination in the Organic Chemistry portion of the Second Examination for Medical Degrees.

2. Candidates who have passed B.Sc. Special in Physiology, or B.Sc. Special with Physiology as their subsidiary subject, or B.Sc. General with Physiology of this University, and have obtained first or second class marks in Physiology at any of the above examinations will be exempted from the course of study and examination in Physiology but will be required to attend the prescribed course in Organic Chemistry and will be examined in that subject unless exempted under 1 above.

3. Registered (or provisionally registered) Medical Practitioners who have passed or been exempted from the First Examination for Medical Degrees may proceed to the Second and Third Examinations for Medical Degrees without observing the intervals prescribed by the regulations, on producing certificates that they have gone through the required course of training, *at any time* previously, provided that the required course of study for the Third Examination must be shown to have covered at least three years. Candidates entitled to the foregoing exemption whose registration as External Students dates from January in any year shall not be admissible to the Third Examination before April of the year next but one ensuing. Candidates whose registration as External Students dates from May or September in any year shall not be admissible to the Third Examination before April of the third year ensuing.

SECOND EXAMINATION FOR MEDICAL DEGREES

QUALIFICATIONS FOR ADMISSION

1 To be admitted to the examination, each candidate must (a) have been registered as an External Student, (b) have passed the First Examination for Medical Degrees at least 18 months previously, (c) have completed the prescribed course of study at an Institution recognized by the University for the purpose, and (d) have obtained approval of candidature for the Second Examination for Medical Degrees not more than three months after his commencement of his course of study for that examination at one of the Medical Schools or Institutions recognized by the University.

2. A candidate who is referred in one subject only at the First Examination for Medical Degrees and subsequently passes in that subject will, subject to the approval of the authorities of his Medical School, be admitted to the Second Examination for Medical Degrees after completing the course of study for the Second Examination, provided he has attended at least three terms of that course subsequently to passing in his referred subject at the First Examination.

3. To be admitted to the Examination in Pharmacology in September, each candidate must (a) have taken the whole of the Second Examination for Medical Degrees, (b) have obtained approval of candidature for this examination not more than one month after publication of the Pass List for the Second Examination at which the candidate failed in Pharmacology only.

DATE OF EXAMINATION

The examination will take place twice in each year, commencing on the third Monday in March and on the first Monday after 28 June.

An examination in Pharmacology will be held in September, commencing on the Thursday following the third Monday in September, to which only candidates will be admitted who have previously attempted

the whole of the Second Examination and have passed in Anatomy and Physiology but failed in Pharmacology.

APPROVAL OF CANDIDATURE

Candidates should normally apply for approval of candidature within three months of the commencement of their course of study. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature within this period, applications may be accepted after this on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 7 January preceding the March Examination, or 30 March preceding the July Examination.

Candidates for the September Examination in Pharmacology only must re-apply for approval within one month of the publication of the Pass List for the Second Examination at which they failed in that subject only.

ENTRY TO EXAMINATION

The candidate list for the March examination will be opened on 4 January, and for the July examination on 19 March. Candidates must apply to the External Registrar for an entry form and a certificate of course of study. These forms will not be despatched by post from the University after 1 February for the March examination, nor after 23 April for the July examination. The candidate list will be closed on 7 February for the March examination and 30 April for the July examination. The candidate list for the September examination in Pharmacology only will be closed on 18 August, and entry forms will not be despatched after 11 August. No entry can be accepted after the candidate list has been closed.

Every candidate when making his entry to the examination must forward a certificate of course of study duly filled up and signed by or on behalf of the appropriate teachers.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Each entry to whole examination	15	15
For candidates who have passed Part I under Old Regulations	9	9
Pharmacology only	5	5
Human Anatomy and Physiology only	10	10

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the First Examination will be set off against the entry fee at the time of entry for the Second Examination taken between 1 September 1952 and 1 September 1956; but no such concession will be made to candidates who were partially exempt from the First Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 March for the March examination or 1 June for the July examination may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix) In the case of the September examination no refund can be made under Section 5 of those regulations.

COURSE OF STUDY

The course of study extends over one and a half academic years, which should be spent at one of the Medical Schools or Institutions recognized by the University.

SCHEME OF EXAMINATION

1. Candidates will be examined in Human Anatomy, Physiology and Pharmacology, as follows :—

Human Anatomy :—

Two papers of three hours each.

A practical and oral examination consisting of :—

- (a) An examination on Regional Anatomy, including dissected parts.
- (b) Radiological and Surface Anatomy.
- (c) Microscopical Anatomy, Neurological Anatomy, and Embryology.

Physiology :—

Two papers of three hours each on Physiology and Histology.

One paper of three hours on Organic Chemistry and Biochemistry.

A practical examination of six hours in Experimental Physiology and Histology.

A practical examination of six hours in Organic Chemistry and Biochemistry.

Pharmacology :—

One paper of two hours.

An oral examination.

2. Candidates are required to satisfy the examiners in each of the written and each of the practical examinations.

3. Candidates are required to pass in Human Anatomy and Physiology at one and the same examination.

4. Candidates must enter for Pharmacology for the first time at the same examination at which they enter for Anatomy and Physiology. A candidate who passes in Anatomy and Physiology, but fails in Pharmacology, may, with the approval of the examiners, present himself for re-examination in Pharmacology alone upon payment of the proper fee. A candidate who passes in Pharmacology, but fails in Anatomy or in Physiology or in both subjects, may, with the approval of the examiners, be credited with success in Pharmacology alone, and in that case will not be required to present that subject again.

5. Candidates who have failed in Pharmacology will, if the examiners so recommend, be required to follow a further approved course of study at one of the Medical Schools or Institutions recognized by the University, before re-entry to the examination in that subject.

6. Candidates are required to bring to the practical examinations in Physiology their *original* laboratory note-books, certified by their teachers as being the actual working notes made by the candidates in the laboratory, for inspection by the examiners.

7. Candidates may use their own practical note-books (but not text-books) at the practical examination in Organic Chemistry and Biochemistry.

8. Candidates who have passed Part I of the Second Examination for Medical Degrees under former regulations are required to take the Biochemistry portions only of the paper and of the practical examination in Organic Chemistry and Biochemistry.

9. The examiners shall be at liberty to test any candidate by means of oral questions.

10. At the practical and oral examinations reference may be made by the examiners to the candidates' class records.

11. Candidates shall not be approved by the examiners unless they have shown a competent knowledge in each of the subjects of the examination.

12. All answers to examination questions shall be written in English unless instructions are given to the contrary.

TIME TABLE

The time table of the examination, showing both the time and place of the written, practical, and oral examinations, will be furnished to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

A list of successful candidates, in alphabetical order, will be published on 21 April for the March examination and on 7 August for the July examination.

A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AWARD OF CERTIFICATE

The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in May and October.

A certificate, signed by the External Registrar, shall then be delivered to each candidate who has passed the examination, and shall in the absence of any request to the contrary be posted to the address given on his entry form.

Sir William Dunn Scholarship

Regulations may be obtained on application to the External Registrar.

SYLLABUSES

For the examinations in Human Anatomy and Physiology, candidates will be expected to bring their own instruments for use at the practical examinations :—razors, razor strop, forceps (fine and coarse), scalpels, scissors (fine and coarse), section lifters, seekers, mounted needles and hand lenses. For Physiology, candidates may use their own microscopes, subject to the examiners' approval.

Human Anatomy

(including Embryology, Neurological Anatomy, Microscopical Anatomy, and the Anatomy of the living subject).

The course of instruction shall extend over five terms, and shall include the following :—

(1) A course of lectures and demonstrations, not less than 100 in all. Stress will be laid on those aspects of the subject which have special bearing on the subsequent work of the candidate.

(2) A course of Dissections extending over not less than twelve months (i.e., four regular terms of University work). In this course the candidate must have dissected the whole body at least once to the satisfaction of his teacher.

(3) Practical instruction in Embryology, Radiological Anatomy and Microscopical Anatomy.

Physiology

(with Histology, Organic Chemistry and Biochemistry).

The course of instruction shall extend over five terms. As a general guide, the following shall be the minimum number of hours' lecturing to be given in each of the branches of the composite subject :—

Physiology with Histology, 120 hours ; Organic Chemistry, 35 hours ; Biochemistry, 35 hours. Total, 190 hours. The lectures are to be supplemented by appropriate practical courses, augmented when necessary by demonstrations in each of the branches.

The range covered by each of the branches shall be :—

Physiology. A course of theoretical and practical physiology.

Histology. A course of theoretical and practical histology.

Organic Chemistry. A theoretical and practical course on the principles of organic chemistry, leading to an adequate knowledge of the nature, reactions and, as far as possible, the constitution of those organic compounds which are of physiological importance.

Biochemistry. A knowledge of the chemical changes taking place in the animal body and their significance in physiological processes.

Pharmacology

A course of lectures, demonstrations, and practical classes introducing the general principles of pharmacology in relation to medicine. Emphasis will be laid on the course of lectures on drugs the action of which elucidates physiological mechanisms and illustrates the principle of biological assay, and on those drugs which have important pharmacological actions on the normal mammal or on those few disease processes which are commonly described in Physiology courses for the Second Medical Examination.

The course of practical pharmacology is intended to illustrate the principal methods which are used to test the action and fate of drugs in animals and man. Emphasis will be laid on experiments which, without presenting technical difficulties, are capable of quantitative evaluation. Particular stress will be laid on the assessment of human variability in response to drugs.

Lectures and demonstrations : Not less than 30 hours.

Practical classes : Not less than 24 hours.

THIRD (M.B., B.S.) EXAMINATION FOR MEDICAL DEGREES

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (*a*) have been registered as an External Student, (*b*) have passed the Second Examination for Medical Degrees, (*c*) have completed the prescribed course of study at an Institution recognized by the University for the purpose, and (*d*) have obtained approval of candidature for the Third Examination for Medical Degrees not more than three months after the commencement of his course of study for that examination at one of the Medical Schools or Institutions recognized by the University, or in the case of Registered (or provisionally registered) Medical Practitioners at least four months before the last date of entry.

DATE OF EXAMINATION

The three parts of the M.B., B.S. Examination will be held twice in each year, Part I commencing on the second Monday in October and the third Monday in April, Part II on the following Tuesdays, Part III on the following Wednesdays, and Part IV on the following Thursdays.

In April 1954 the examination will commence on Tuesday, 19 April. In October 1954 the examination will commence on the first Monday in October, i.e., 4 October, 1954.

APPROVAL OF CANDIDATURE

Candidates should normally apply for approval of candidature within three months of the commencement of their course of study. Registered (or provisionally registered) Medical Practitioners may apply up to four months before the last date of entry. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature within this period, applications may be accepted after these dates on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 31 July preceding the October Examination or 15 December preceding the April Examination.

ENTRY TO EXAMINATION

The candidate list for the October examination will be opened on 20 July. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make entry as early as possible. Entry forms will not be despatched by post from the University after 24 August, and the candidate list will be closed on 31 August. No entry can be accepted after the candidate list has been closed.

The candidate list for the April examination will be opened on 4 December. Entry forms will not be despatched by post from the University after 8 January, and the candidate list will be closed on 15 January. No entry can be accepted after the candidate list has been closed.

Every candidate when making his entry to the examination must forward a certificate of course of study duly filled up and signed by or on behalf of the appropriate teachers.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

Each entry to the whole examination	£	s.
Each entry to part of the examination, per Part. . .	25	4
	6	6

Candidates who have passed Group I under the old regulations and take Parts III and IV under the new regulations shall pay £6 6s. for the first entry and £5 5s. for subsequent entries for each of Parts III and IV.

Candidates who have passed Group II under the old regulations and take Parts I and II under the new regulations shall pay £4 14s. 6d. for the first entry and £5 5s. for subsequent entries for each of Parts I and II.

Candidates who passed in Pathology at Group I under the old regulations in or after November 1938, and are credited with that subject, shall pay £5 5s. for each of Parts II, III and IV under the new regulations.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 15 March for the April examination and 15 September for the October examination may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix).

SCHEME OF EXAMINATION

1. Candidates may take Part I after completing 30 months' approved clinical course. On completion of the whole clinical course (36 months) a candidate must take Parts II, III and IV together, and must present himself for re-examination in Part I if he has not already satisfied the Examiners. A candidate will be credited with the Part or Parts in which he satisfies the Examiners. At any subsequent entry the candidate must take all those Parts of the Examination in which he has not already passed.

Part I

Pathology :—

- (a) One paper of three hours' duration.
- (b) A practical examination of three hours' duration.
- (c) An oral examination.

Part II

Medicine :—

- (a) Two papers, each of three hours' duration.
- (b) A clinical examination in Medicine consisting of :—
 - (i) An examination of a patient for thirty minutes followed by an oral examination.
 - (ii) An oral examination on one or more other cases.
- (c) An oral examination.

No candidate will be approved in Medicine who does not satisfy the Examiners in the examinations (b) and (c).

Applied Pharmacology and Therapeutics :—

- (a) One paper of three hours' duration.
- (b) An oral examination.

Part III

Surgery :—

- (a) One paper of three hours' duration.
- (b) A clinical examination in Surgery.
- (c) An oral examination.

No candidate will be approved in Surgery who does not satisfy the Examiners in the clinical and oral examinations (b) and (c).

Part IV

Obstetrics and Gynaecology :—

- (a) One paper of three hours' duration.
- (b) A clinical examination in Obstetrics and Gynaecology.
- (c) An oral examination including questions on specimens and appliances.

No candidate will be approved in Obstetrics and Gynaecology who does not satisfy the Examiners in the clinical examination (b).

2. A candidate shall not be approved by the Examiners in any one Part unless he has attended all the written, practical, clinical and oral examinations in all the Parts of the Examination for which he has entered.

3. A candidate prevented by illness or other cause beyond his control from attending part of the Examination may apply to be credited with the Part or Parts in which he has satisfied the Examiners provided that he submits to the University satisfactory documentary evidence explaining his absence.

4. Candidates will not be approved by the Examiners in Part II unless they have shown a competent knowledge in both the subjects of that Part.

5. A candidate (other than a Registered (or provisionally registered) Medical Practitioner) who has failed at Part I will be required on re-entry to produce evidence of having attended for a further period of three months in the Department of Pathology of a recognized Hospital.

6. A candidate (other than a Registered (or provisionally registered) Medical Practitioner) who has failed at Part II will be required on re-entry for that Part to produce evidence of having attended for a further period of three months the medical practice of a recognized Hospital. Similarly, a candidate (other than a Registered (or provisionally registered) Medical Practitioner) who has failed at Part III will be required on re-entry for that Part to produce evidence of having attended for a further period of three months the surgical practice of a recognized Hospital, and a candidate who has failed at Part IV, evidence of having attended for a further three months the obstetric practice of a recognized Hospital.

7. Registered (or provisionally registered) Medical Practitioners may enter for re-examination at any subsequent examination on payment of the proper fee.

8. There will be no separate examination held for Honours.

9. At the practical examination in Pathology, each candidate is expected to provide for his own use a microscope, with a $\frac{1}{2}$ -inch lens, a $\frac{1}{4}$ -inch lens, and a $1\frac{1}{2}$ -inch immersion lens. The University will supply a microscope with the necessary lenses, for use at the examination, on payment of a fee of ten shillings, to any candidate who shall have given notice on his entry form.

10. All answers to examination questions shall be written in English unless instructions are given to the contrary.

TIME TABLE

The time table of the examination, showing both the time and place of the written, practical, and oral examinations, will be furnished to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

Provisional lists of candidates, in alphabetical order, who have passed Parts I, II, III or IV will be published on 24 May for the April examination and on 16 November for the October examination.

A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

The Pass List for the whole M.B., B.S. Examination will be in two divisions, i.e., Honours and Pass.

In the Honours List the subject or subjects in which the successful candidates have distinguished themselves will be shown.

In order to be eligible for the award of Honours in any subject a candidate must either have passed Parts I, II, III and IV on the same occasion or have passed Parts II, III and IV together at the examination next following his Part I examination.

A candidate who has failed at any time in any Part of the Final Examination is not eligible for the award of Honours.

UNIVERSITY MEDAL

The examiners are empowered to recommend the award of a University Medal and/or books to the total value of £5 to the candidate in the Honours List who has most distinguished himself in the whole Examination. The books must be selected by the candidate and approved by the University.

AWARD OF DIPLOMA

1. A Diploma for the Degrees of Bachelor of Medicine and Bachelor of Surgery, under the Seal of the University, shall be delivered to each candidate who has passed all parts of the examination, after the reports of the examiners shall have been approved by the Senate.

2. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

COURSE OF STUDY

The course of study shall extend over three years, which shall be spent at a Hospital or Hospitals recognized by the University and include Medicine, Surgery, Obstetrics and Gynaecology, and Pathology, as well as the special subjects mentioned in the scheme of examination.

The course of study for Part I extends over 30 months and shall normally be attended subsequently to passing the Second Examination.

The course of study for Parts II, III and IV extends over 36 months and shall normally be attended subsequently to passing the Second Examination.

Candidates who have been permitted to present themselves for re-examination in Pharmacology only are allowed to begin the course of study for the Third Examination at any time subsequently to passing in Anatomy and Physiology at the Second Examination.

Candidates for Part I must have completed the prescribed courses of study for that Part, and, in view of the fact that questions may be set in the following subjects, should also have completed the courses of instruction in Fevers, Venereal Diseases, Mental Diseases, and Vaccination, and attendance at ante-natal and post-natal clinics (*see* (10) under Medicine and (20a) under Obstetrics below).

Candidates for Part II, Part III, or Part IV must have completed the prescribed course of study in all the subjects of those Parts.

Candidates who passed part of the M.B., B.S. Examination in or before May 1940 are permitted, if they so desire, to complete the examination under the revised regulations in accordance with the following scheme :—

Candidates who have passed Group I may take Parts III and IV only.

Candidates who have passed Group II may take Parts I and II only.

Candidates who passed in Pathology at Group I in or after November 1938 may be credited with Part I.

A candidate who, at an examination held in or before April 1952, had been credited with Pathology at Part I, but who had not, by that date, satisfied the examiners in Hygiene at that Part, is now credited with Part I of the M.B., B.S. Examination, under the revised Regulations.

A candidate who had passed in both subjects of Part I under the regulations in force for examinations held in or before April 1952, but who has still to take Part II will not be exempted from the questions in Hygiene at Part II (Medicine) although he has already satisfied the Examiners in Hygiene at Part I.

At the commencement of the three years' clinical period every candidate shall attend an introductory course of instruction in :—

- (1) Pathology.
- (2) Clinical Medicine.
- (3) Clinical Surgery.

The curriculum of the clinical period shall be as follows :—

Pathology

(4) Instruction in General Pathology, Morbid Anatomy, Bacteriology and Chemical Pathology, including practical work in the last-named three subjects.

(5) Attendance in the Post-mortem Room, including the performance of the duties of Post-mortem Clerk, for not less than three months, and practical experience in making post-mortem examinations.

(6) Attendance in a Clinical Laboratory of a recognized Institution during a period of at least three months.

(7) Instruction in Hygiene and Forensic Medicine.

Medicine

(8) Instruction in the principles and practice of Medicine including Clinical Pathology and laboratory methods, the application of Physiology and Anatomy to the investigation of disease, and the methods of prevention of disease.

(9) (a) An appointment for six months as Clinical Clerk in the Medical wards of a recognized Hospital.

(b) An appointment for three months as Clinical Clerk in the Medical out-patient department of a recognized Hospital. This appointment may run concurrently with (a) above.

(10) Instruction in :—

(a) Children's diseases, including one month's appointment as Clinical Clerk in the Children's Ward of a recognized Hospital.

(b) Dermatology.

- (c) Fevers. This course must be taken at a recognized Fever Hospital.
- (d) Psychiatry : this course should be carried out mainly in a psychiatric out-patient department where neuroses and psycho-neuroses can be studied, but clinical demonstrations should also be given at a recognized Mental Hospital and at a recognized Mental Deficiency Institution.
- (e) Physio-Therapy.
- (f) Psychology in relation to Medicine.
- (g) Radiology in its application to Medicine.
- (h) Vaccination.
- (i) Venereal diseases.

(11) (a) Instruction in Hygiene.

(b) Instruction in the responsibilities of the medical practitioner in Forensic Medicine and Toxicology and his Statutory obligations to Government authorities.

In all the above subjects clinical or practical instruction shall, if possible, be given in preference to systematic lectures.

Questions on the subjects under (10) above may be included in the examination in Medicine, but separate examinations in those subjects will not be held.

Applied Pharmacology and Therapeutics

(12) Instruction in Applied Pharmacology and Therapeutics during the clinical period and including the rational basis of medical treatment of diseases, the use of drugs, immunological products, hormones, diet and physical methods, the principles of nursing, dispensing, and the writing of prescriptions.

In and after 1954 a systematic course of lectures and demonstrations dealing with the use of drugs in the treatment of disease ; the administration, distribution, and elimination of drugs, their action in the human organism and the toxic effects which may be produced ; the evaluation of the therapeutic effects of drugs including simple statistical treatment of data. The teaching of applied pharmacology and therapeutics should be designed to meet the needs of general medical practice. The course should include :

Principles of therapeutic trials in man. Antiseptics and chemotherapy. Drugs acting on the central nervous system, the autonomic nervous system, the peripheral nerves and muscles, the alimentary canal, the circulation, the respiration, the kidneys, the haemopoietic system, the endocrine glands and reproductive organs, temperature regulation and the skin, vitamins, hormones, radio-active substances, body fluids and inorganic constituents of the body.

The therapeutic application of drugs and other remedies to the treatment of disease including the principles of nursing dietetics and physical methods, the principles of dispensing and the writing of prescriptions.

Surgery

(13) Instruction in the principles and practice of Surgery, including clinical pathology and laboratory methods, the application of Physiology and Anatomy to the investigation of disease, and the methods of prevention of disease.

(14) (a) An appointment for six months as Surgical Dresser in the wards of a recognized Hospital.

(b) An appointment for three months as Surgical Dresser in the out-patient department of a recognized Hospital. This appointment may run concurrently with (a) above.

Instruction in :—

(15) Ophthalmology, mainly directed to special methods of investigation, the use of special instruments, and demonstrations on clinical cases.

(16) Oto-Rhino-Laryngology, mainly directed to special methods of investigation, the use of special instruments and demonstrations on clinical cases.

(17) (a) Administration of Anaesthetics.

(b) Applied Anatomy.

(c) Dental Surgery.

(d) Operative Surgery.

(e) Orthopaedic Surgery.

(f) Physio-Therapy.

(g) Radiology in its application to Surgery.

In all the above subjects clinical or practical instruction shall, if possible, be given in preference to systematic lectures.

Questions on the subjects under (15), (16) and (17) above may be included in the examination in Surgery, but separate examinations in these subjects will not be held.

Obstetrics and Gynaecology

(18) Instruction in the principles and practice of Obstetrics and Gynaecology, including the Applied Anatomy and Physiology of pregnancy and labour, and the methods of prevention of disease.

(19) The minimum period of study devoted to clinical Obstetrics and Gynaecology shall be six months subsequent to the Medical Clerkship and Surgical Dressership under (9) and (14) above. During this period the hours of instruction shall be so allotted that at least two-thirds are given to Obstetrics, including ante-natal care and the hygiene of infants. The course shall include :—

(a) Two months' attendance in a Maternity Hospital or the maternity wards of a General Hospital. During the period the candidate should wherever practicable be resident in the Hospital or in a hostel attached thereto.

(b) The personal conduct of 20 labours under supervision, at least five of which must be in the Hospital. Certificates with regard to the conduct of labours will be received from the Dean of a recognized Medical School or authorized member of the staff of a recognized Hospital.

(c) Clinical clerking in the gynaecological wards and out-patient department of a recognized Hospital for at least two months.

(20) Throughout the six months the candidate should receive practical instruction in the wards and out-patient department of the Maternity Hospital in the principles of :—

(a) Ante-natal and post-natal care.

(b) The management of the puerperium.

(c) The care of the new born infant.

**INSTITUTIONS RECOGNIZED FOR PURPOSES OF
M.B., B.S. DEGREES**

A list of the Institutions which are recognized by the University for purposes of the M.B., B.S. Degrees for External Students may be obtained on application to the External Registrar.

UNIVERSITY OF LONDON



REGULATIONS FOR THE M.D. AND M.S. DEGREES for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

DOCTOR OF MEDICINE (M.D.)**QUALIFICATIONS FOR ADMISSION**

1. To be admitted to the M.D. Examination, Part I, each candidate must have obtained the Degrees of Bachelor of Medicine and Bachelor of Surgery of this University not less than two calendar years previously.

[Note.—A candidate who has held appointments at a recognized Institution (*see* p. 868) for not less than two years after obtaining the M.B., B.S. Degrees of this University may apply for exemption from Part I. Each application will be considered on its merits.]

2. To be admitted to the M.D. Examination, Part II, each candidate must (a) have obtained the Degrees of Bachelor of Medicine and Bachelor of Surgery of this University not less than five calendar years previously, (b) have passed or obtained exemption from the M.D. Examination, Part I.

3. A candidate must satisfy the Examiners at Part I of the Examination or be exempted therefrom before he will be permitted to enter for Part II.

DATE OF EXAMINATION

The Examination for Part I will be held twice in each year, commencing on the first Monday after 28 June and on the second Monday in December.

ENTRY TO EXAMINATION*Part I.*

For the examination held in July, the candidate list will be opened on 20 March. Entry must be made on the appropriate form which may be obtained from the External Registrar. Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 23 April and the candidate list will be closed on 1 May. No entry can be accepted after the candidate list has been closed.

For the examination held in December, the candidate list will be opened on 20 August. Entry forms will not be despatched by post from the University after 23 September and the candidate list will be closed on 1 October. No entry can be accepted after the candidate list has been closed.

Part II.

Candidates duly qualified for Part II of the Examination may apply at any time for an entry form, but they are warned that, in view of the Summer Vacation, the result of an entry submitted after 1 May is liable to considerable delay. A candidate should give preliminary notice of his intention to enter for the examination three months before submitting his entry form.

The entry form for Part II of the examination must be accompanied by two copies of the thesis.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole Examination	21	0
Part I	10	10
Part II	10	10
Re-examination in either Part	10	10
Exemption from Part I.. .. .	10	10

[Note.—The exemption fee is payable on entry to Part II.]

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from Part I of the examination after the last date of entry, but not later than 1 June for the July examination or 1 November for the December examination may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations, p. x).

SCHEME OF EXAMINATION

Part I.

- (1) **Medicine** (two papers)
- (2) **Pathology** (one paper)
- (3) **General Medicine**, including the **History of Medicine** (an essay on one of a choice of subjects).

In the essay paper the candidate will be expected to set forth his ideas in a clear and orderly manner, and to examine critically the various views and suggestions that have been put forward with regard to the subject selected. Account will be taken not only of knowledge of detail, but also of the power to construct a lucid and well co-ordinated essay; the essay must be written in English.

- (4) A clinical examination of patients.
- (5) An oral examination

Part II.

1. A thesis dealing with general Medicine or with some special branch of Medicine, and an oral examination on general Medicine and on the special subject dealt with in the thesis. A candidate who is summoned to attend an oral examination shall be required to bring with him a copy of his thesis paged in the same way as the two copies submitted for examination. After the Examiners have read the thesis they may, however, if they think fit and without further test, recommend that the candidate be accepted or rejected.

2. If in the opinion of the Examiners the thesis is found to be inadequate but nevertheless seems to them to be of sufficient merit to justify such action, the Examiners may recommend the Senate to permit the candidate to re-present his thesis in a revised form within 18 months from the decision of the Senate with regard thereto.

3. The thesis must be written in English and may consist of a single paper or of a series of papers on the same subject published or unpublished.

4. The candidate must indicate in what respects the thesis appears to him to advance medical knowledge or practice. It must be satisfactory as regards literary presentation and if not already published must be submitted in a form suitable for publication. In addition to his thesis the

candidate is also invited to submit in support of his candidature any printed contributions to the advancement of medical or surgical science which he may have published independently or conjointly. In the event of any candidate submitting conjoint work, he will be required to state fully his own share in this work.

5. A candidate submitting a thesis in typescript will be required to supply two of the copies of his thesis bound in accordance with the following specifications :—

Size of paper, quarto, approx. 10 inches by 8 inches, except for drawings and maps on which no restriction is placed. A margin of $1\frac{1}{2}$ inches to be left on the left-hand side. Bound in a standardized form as follows :—art vellum or cloth ; overcast ; edges uncut ; lettered boldly up back in gold ($\frac{1}{4}$ -inch to $\frac{1}{2}$ -inch letters), DEGREE, DATE, NAME ; short title written or printed neatly and legibly on the front cover.

A thesis which consists of a collection of printed pamphlets or excerpts or of a single pamphlet must be bound in a similar cover.

[Note.—The name and address of a firm of book-binders in London, who will bind theses to this specification at a cost of 7s. a copy, may be obtained from the External Registrar.]

6. A candidate will not be permitted to submit as his thesis one for which a Degree has been conferred on him, in this or in any other University, but a candidate shall not be precluded from incorporating work which he has already submitted for such a Degree in a thesis covering a wider field, provided that he shall indicate on his entry form and also on his thesis any work which has been so incorporated.

7. Any thesis submitted must be satisfactory as regards literary presentation, as well as in other respects, and must be in a form suitable for publication.

8. Work approved for the Degree and subsequently published must contain a reference, either on the title page or in the preface, to the fact that the work has been approved by the University for the award of the Degree.

9. Copies of all successful theses, together with any subsidiary contributions submitted, will be deposited for reference in the University Library. Any copies of the thesis which are not required by the University after the examination has been completed will be returned to the candidate.

NOTIFICATION OF RESULT

A provisional list of successful candidates for Part I in alphabetical order will be published on 9 August for the July examination, and on 16 January for the December examination.

After the Report of the Examiners on the thesis shall have been approved by the Senate, the External Registrar shall publish a list of candidates on whom the Degree has been conferred.

A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. A Diploma for the Degree of M.D., under the Seal of the University, shall be delivered to each successful candidate.

2. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

RESEARCH FUND

The Senate has at its disposal a Research Fund from which grants may be made to individuals for the provision of materials and apparatus for specific projects of research. Any External Graduate or Student for an External Higher Degree who desires to be considered as an applicant for a grant should in the first place communicate with the External Registrar.

MASTER OF SURGERY (M.S.)

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the M.S. Examination, Part I, each candidate must have obtained the Degrees of Bachelor of Medicine and Bachelor of Surgery of this University not less than two calendar years previously.

[Note.—A candidate who has held appointments at a recognized institution (*see* p. 868) for not less than two years after obtaining the M.B., B.S. Degrees of this University may apply for exemption from Part I. Each application will be considered on its merits.]

2. To be admitted to the M.S. Examination, Part II, each candidate must (a) have obtained the Degrees of Bachelor of Medicine and Bachelor of Surgery of this University not less than five calendar years previously, (b) have passed or obtained exemption from the M.S. Examination, Part I.

3. A candidate must satisfy the Examiners at Part I of the Examination or be exempted therefrom before he will be permitted to enter for Part II.

DATE OF EXAMINATION

The Examination for Part I will be held twice in each year, commencing on the first Monday after 28 June and on the second Monday in December.

ENTRY TO EXAMINATION

Part I.

For the examination held in July, the candidate list will be opened on 20 March. Entry must be made on the appropriate form, which may be obtained from the External Registrar. Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 23 April and the candidate list will be closed on 1 May. No entry can be accepted after the candidate list has been closed.

For the examination held in December, the candidate list will be opened on 20 August. Entry forms will not be despatched by post from the University after 23 September, and the candidate list will be closed on 1 October. No entry can be accepted after the candidate list has been closed.

Part II.

Candidates duly qualified for Part II of the examination may apply at any time for an entry form, but they are warned that, in view of the Summer Vacation, the result of an entry submitted after 1 May is liable to considerable delay. A candidate should give preliminary notice of his intention to enter for the examination three months before submitting his entry form.

The entry form for Part II of the examination must be accompanied by two copies of the thesis.

Each candidate for Part II of the examination must submit a record of the operations performed by him, signed by the surgeon or surgeons under whom he has worked, or other persons whom the University may approve for the purpose.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole Examination	21	0
Part I	10	10
Part II	10	10
Re-examination in either Part	10	10
Exemption from Part I	10	10

[*Note.*—The exemption fee is payable on entry to Part II.]

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from Part I of the examination after the last date of entry but not later than 1 June in the case of the July examination or 1 November in the case of the December examination may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. x).

SCHEME OF EXAMINATION

Part I.

- (1) **Surgery**, including **Surgical Pathology** (two papers).
- (2) **Surgical Anatomy** and **Applied Physiology** (one paper).
- (3) **General Surgery** (an essay on one of a choice of subjects).

In the essay paper the candidate will be expected to set forth his ideas in a clear and orderly manner, and to examine critically the various views and suggestions that have been put forward with regard to the subject selected. Account will be taken not only of knowledge of detail, but also of the power to construct a lucid and well co-ordinated essay; the essay must be written in English.

- (4) A clinical examination.
- (5) An examination in methods of surgical approach and the conduct of operations.
- (6) An oral examination.

Part II.

1. A thesis dealing with general Surgery or with some special branch of Surgery, and an oral examination on general Surgery and on the special subject dealt with in the thesis. A candidate who is summoned to attend an oral examination shall be required to bring with him a copy of his thesis paged in the same way as the two copies submitted for examination. After the Examiners have read the thesis they may, however, if they think fit and without further test, recommend that the candidate be accepted or rejected.

2. If in the opinion of the Examiners the thesis is found to be inadequate but nevertheless seems to them to be of sufficient merit to justify such action, the Examiners may recommend the Senate to permit the candidate to re-present his thesis in a revised form within 18 months from the decision of the Senate with regard thereto.

3. The thesis must be written in English and may consist of a single paper or a series of papers on the same subject published or unpublished.

4. The candidate must indicate in what respects his thesis appears to him to advance surgical knowledge or practice. It must be satisfactory as regards literary presentation and if not already published must be submitted in a form suitable for publication. In addition to his thesis the candidate is also invited to submit in support of his candidature any printed contributions to the advancement of surgical or medical science which he may have published independently or conjointly. In the event of any candidate submitting conjoint work, he will be required to state fully his own share in the work.

5. A candidate submitting a thesis in typescript will be required to supply two of the copies of his thesis bound in accordance with the following specification :—

Size of paper, quarto, approx. 10 inches by 8 inches except for drawings and maps, on which no restriction is placed. A margin of $1\frac{1}{2}$ inches to be left on the left-hand side. Bound in a standardized form as follows :—art vellum or cloth ; overcast ; edges uncut ; lettered boldly up back in gold ($\frac{1}{4}$ -inch to $\frac{1}{2}$ -inch letters), DEGREE, DATE, NAME ; short title written or printed neatly and legibly on the front cover.

A thesis which consists of a collection of printed pamphlets or excerpts or of a single pamphlet must be bound in a similar cover.

[Note.—The name and address of a firm of book-binders in London, who will bind theses to this specification at a cost of 7s. a copy, may be obtained from the External Registrar.]

6. A candidate will not be permitted to submit as his thesis one for which a Degree has been conferred on him in this or in any other University, but a candidate shall not be precluded from incorporating work which he has already submitted for such a Degree in a thesis covering a wider field, provided that he shall indicate on his entry form and also on his thesis any work which has been so incorporated.

7. Any thesis submitted must be satisfactory as regards literary presentation, as well as in other respects, and must be in a form suitable for publication.

8. Work approved for the Degree and subsequently published must contain a reference, either on the title page or in the preface, to the fact that the work has been approved by the University for the award of the Degree.

9. Copies of all successful theses, together with any subsidiary contributions submitted, will be deposited for reference in the University Library. Any copies of the thesis which are not required by the University after the examination has been completed will be returned to the candidate.

NOTIFICATION OF RESULT

A provisional list of successful candidates for Part I, arranged in alphabetical order, will be published on 26 July for the July examination, and on 3 January for the December examination.

After the Report of the Examiners on the thesis shall have been approved by the Senate, the External Registrar shall publish a list of candidates on whom the Degree has been conferred.

A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. A Diploma for the Degree of M.S., under the seal of the University, shall be delivered to each successful candidate.

2. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

RESEARCH FUND

The Senate has at its disposal a Research Fund from which grants may be made to individuals for the provision of materials and apparatus for specific projects of research. Any External Graduate or Student for an External Higher Degree who desires to be considered as an applicant for a grant should in the first place communicate with the External Registrar.

**INSTITUTIONS RECOGNIZED FOR PURPOSES OF
M.D AND M.S. DEGREES**

Candidates who have held appointments at one or more of the following Institutions for not less than two years after obtaining the M.B., B.S. Degrees of this University may apply for exemption from Part I of the M.D. or M.S. Degree. In special circumstances applications will also be considered in respect of appointments held at other Hospitals, Medical Schools and Institutions.

Charing Cross Hospital and Medical School
Guy's Hospital and Medical School
King's College Hospital and Medical School
London Hospital and Medical College
Middlesex Hospital and Medical School
Royal Dental Hospital of London and School of Dental Surgery
Royal Free Hospital and School of Medicine
St. Bartholomew's Hospital and Medical College
St. George's Hospital and Medical School
St. Mary's Hospital and Medical School
St. Thomas's Hospital and Medical School
University College Hospital and Medical School
Westminster Hospital and Medical School
Hammersmith Hospital and the Postgraduate Medical School of
London.

UNIVERSITY OF LONDON



REGULATIONS

FOR THE DEGREE

IN

DENTAL

SURGERY

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Candidates for the Degree of Bachelor of Dental Surgery as External Students shall be required :—

(1) To have satisfied the minimum University and Faculty entrance requirements and to have been registered as External Students not less than five and a half years previous to their entry for the final examination.

(2) To have passed subsequent examinations as follows :—

(a) First Examination for Medical Degrees. (See separate pamphlet.)

(b) Second Examination in Dental Surgery :

General Anatomy, Physiology, and Special Anatomy and Histology not less than twelve months after passing the First Examination for Medical Degrees.

(c) Third Examination in Dental Surgery :

Part I—Prosthetic Dentistry not less than twelve months after passing the Second Examination in Dental Surgery.

Part II—Medicine, Surgery, Pathology and Bacteriology, Pharmacology and Therapeutics, not less than 28 months after passing the Second Examination in Dental Surgery.

Part III—Dental Surgery (including Special Pathology) and Orthodontics, at the following examination not less than 40 months after passing the Second Examination in Dental Surgery.

(3) To have been engaged in their professional studies during five and a half years subsequent to registration as External Students, and for four and a half years subsequent to their passing the First Medical, at one or more of the Institutions or Schools recognized by the University for the purpose.

The Bachelor's Degree in Dental Surgery (B.D.S.) is *not* a qualification for admission to the examination for the Degree of Master of Surgery (M.S.). In order to be admitted to the M.S. Examination, a candidate must first have obtained the Degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.) and otherwise have complied with the regulations relating to the Degree of Master of Surgery.

FACULTY REQUIREMENTS

A candidate who has matriculated by means of a General Certificate of Education will be required to have passed in Chemistry and Physics at Ordinary or Advanced Level.

EXEMPTIONS

1. *Second Examination in Dental Surgery* :—

(a) Candidates who have passed in Anatomy and Physiology at the Second Medical Examination of this University will be exempt from Physiology and from section (i) only of the examination in Anatomy at the Second Examination in Dental Surgery.

(b) Registered Dental Practitioners who shall have passed the First Examination may proceed to the Second and Third Examinations in Dental Surgery without observing the intervals prescribed by the regulations, on producing certificates that they have gone through the required course of training *at any time* previously ; provided that the required course of study for the Third Examination shall be shown to have covered at least three years and four months, and that candidates

entitled to the foregoing exemption whose registration as External Students dates from January in any year, shall not be admissible to the Third Examination before June of the year next but one ensuing ; and similarly, candidates whose registration as External Students dates from May or September in any year shall not be admissible to the Third Examination before June of the third year ensuing.

(c) A student who has obtained the M.B., B.S. Degrees of this University will be permitted to begin study for the Third Examination in Dental Surgery before completion of the Second Examination in Dental Surgery. He will be admitted to the examination in Special Anatomy at the Second Examination in Dental Surgery and to the Third Examination in Dental Surgery provided that he has completed the prescribed courses of study in the subjects from which he is not entitled to exemption.

2. *Third Examination in Dental Surgery :—*

(a) Candidates who have passed in Pharmacology at the Second Medical Examination of this University will be exempt from Pharmacology at the Third Examination in Dental Surgery.

(b) Candidates who have passed the M.B., B.S., of this University will be exempt from Medicine, Surgery, Pathology and Bacteriology at the Third Examination in Dental Surgery.

(c) A candidate who has passed the Second Examination in Dental Surgery, Part II (prosthetic Dentistry) under former Regulations will be exempted from Part I of the Third (B.D.S.) Examination in Dental Surgery.

SECOND EXAMINATION IN DENTAL SURGERY

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have been registered as an External Student, (b) have passed the First Medical Examination at least 12 months previously, (c) have completed the prescribed course of study, and (d) have obtained approval of candidature for the Second Examination in Dental Surgery, within three months of having commenced his course of study.

Candidates who are referred in one subject at the First Medical in July or December and pass in that subject at the next following First Medical will be permitted to proceed to the Second Examination in Dental Surgery, as though they had completed the First Medical in July or December respectively, provided they have completed the prescribed course of study.

DATE OF EXAMINATION

The Examination will take place twice in each year, commencing on the second Monday after 28 June and on the first Monday in December.

APPROVAL OF CANDIDATURE

Candidates should normally apply for approval of candidature within three months of the commencement of their course of study. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature within this period, applications may be accepted after this date on payment of a late fee of £1 1s, which is not returnable, but no application will be accepted after 30 March preceding the July examination or 1 October preceding the December examination.

ENTRY TO EXAMINATION

The candidate list for the July examination will be opened on 19 March. Entry forms will not be despatched by post from the University after 23 April, and the candidate list will be closed on 30 April. No entry can be accepted after the candidate list has been closed.

The candidate list for the December examination will be opened on 20 September. Entry forms will not be despatched by post from the University after 24 October and the candidate list will be closed on 1 November. No entry can be accepted after the candidate list has been closed.

Every candidate when making his entry to the examination must forward a certificate of course of study duly filled up and signed by or on behalf of the appropriate teachers.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Each entry to the examination	7	7
For entry or re-entry in Special Anatomy alone ..	4	4

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the First Examination will be set off against the entry fee at the time of entry for the Second examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the First Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the July examination after the last date of entry but not later than 1 June, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations, p. ix). In the case of the December Examination no refund can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION

Candidates will be examined in Anatomy (General and Special) and Physiology, as follows :—

Anatomy. Section i, General : One paper of three hours' duration and an oral examination.

Section ii, Special : One paper of two hours' duration and an oral examination.

Physiology. One paper of three hours' duration and an oral examination.

Candidates shall not be approved by the examiners unless they have shown a competent knowledge in each of the subjects of the examination.

All answers to examination questions shall be written in English unless instructions are given to the contrary.

TIME TABLE

The time table of the examination, showing both the time and place of the written and oral examinations, will be furnished to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

A list of successful candidates, in alphabetical order, will be published at 2 o'clock on 21 August for the July examination and on 15 January for the December examination.

A copy of the Pass List will be sent to each successful candidate and an individual communication will be sent to each unsuccessful candidate.

AWARD OF CERTIFICATE

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October and January.

2. A certificate, signed by the External Registrar, shall then be delivered to each candidate who has passed the examination, and will in the absence of any request to the contrary be posted to the address given on his entry form.

COURSE OF STUDY AND SYLLABUSES

The course for the Second Examination in Dental Surgery should occupy the second year of study and comprises the following subjects.

Anatomy

Section i (General)

A course of lectures and demonstrations, not less than 80 in all, including dissections, extending over three terms, and covering the following syllabus :—

The topographical anatomy and dissection of the human head and neck. The topographical anatomy of the central nervous system and the sense organs. The development of the jaws, face and buccal cavity.

Dissection of the human body with a view to obtaining a general knowledge of the pericardial, pleural and peritoneal cavities ; the circulatory (blood and lymph), respiratory, alimentary and genito-urinary systems ; the ductless glands.

The elementary anatomy of the skeleton, articulations, muscles, vessels and nerves.

The macroscopical and microscopical appearance of the tissues of the body.

Correlation between structure and function is emphasized.

The standard of knowledge expected of a candidate of the topographical anatomy of the head and neck is not less than that expected of candidates for the Second Medical examination.

Section ii (Special)

A course of lectures and demonstrations not less than 30 in all, extending over two terms, including 10 classes in histology, and covering the following syllabus :—

Knowledge of the evolution of the human teeth and jaws with special reference to those of Primates and Prehistoric man.

Adaptive modification illustrated by the relationship between forms of teeth and temporo-mandibular joint in mammals.

The development and growth of the jaws and teeth.

The anatomy, histology, and functions of dental tissues, gums and alveolar processes.

Physiology

A theoretical and practical course of not less than 60 hours, extending over not less than three terms, and covering the following syllabus :—

An elementary knowledge of the working of the human body as a whole, special reference being made to the applications of Physiology in dentistry.

A practical course in elementary chemical Physiology, simple tests for proteins, fats and carbohydrates. Foods, digestion, blood, bile, and urine.

Demonstrations in elementary Experimental Physiology.

Where Histology is taught in the Physiological Department, the period of 60 hours should be lengthened by 20 hours, which time should be allotted to the teaching of Histology.

THIRD (B.D.S.) EXAMINATION IN DENTAL SURGERY

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination, each candidate must (a) have been registered as an External Student, (b) have passed the Second Examination in Dental Surgery not less than 12 months previous to entering for Part I or 28 months previous to entering for Part II, or 40 months previous to entering for Part III, (c) have completed the prescribed course of study, and (d) have obtained approval of candidature for the Third Examination in Dental Surgery, Parts I, II and III within three months of having commenced his course of study for that examination.

Candidates who have obtained the M.B., B.S. Degrees of this University and who have passed the Second Examination in Dental Surgery, will be permitted to enter for the Third Examination in Dental Surgery on completing the prescribed course of study in the subjects in which they are not entitled to exemption (*see* page 903 para. 2(b)).

DATE OF EXAMINATION

The Examination will take place twice in each year commencing on the fourth Monday in June and on the last Monday in November

APPROVAL OF CANDIDATURE

Candidates should normally apply for approval of candidature within three months of commencing their course of study. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature within this period, applications may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 15 April preceding the June examination or 1 October preceding the November examination.

ENTRY TO EXAMINATION

The candidate list for the June examination will be opened on 3 April. Entry forms will not be despatched by post from the University after 8 May and the candidate list will be closed on 15 May. No entry can be accepted after the candidate list has been closed.

The candidate list for the November examination will be opened on 20 September. Entry forms will not be despatched by post from the University after 24 October and the candidate list will be closed on 1 November. No entry can be accepted after the candidate list has been closed.

Every candidate when making his entry to the examination must forward a certificate of course of study duly filled up and signed by or on behalf of the appropriate teachers.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

Fees are as follows:—

							£	s.
Part I	..	..	..	..	..	..	4	4
Part II	..	..	..	..	..	..	8	8
Part III	..	..	..	..	..	..	8	8

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. Conditions governing the Return of Examination Fees are printed in the General Regulations (see p. ix). In the case of the B.D.S. examination no refund of part of the entry fee can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION

The Third examination is divided into three parts as follows :—

Part I. Prosthetic Dentistry, including Properties of Dental Materials.

Part II. Medicine, Surgery, Pharmacology and Therapeutics, Pathology and Bacteriology.

Part III. Dental Surgery (including Special Pathology) and Orthodontics.

Part I may be taken not less than 12 months, Part II not less than 2 years 4 months, and Part III not less than 3 years 4 months, after a candidate has passed the Second Examination in Dental Surgery.

The three Parts may be taken together, but a candidate who takes all three Parts and fails Part I or Part II will have no report upon his result at Part III.

A candidate (other than a registered dental practitioner) who has failed in any part of the Third Examination will not be permitted to re-enter for that part without the approval of the Dean of a recognized medical or dental school.

Registered dental practitioners who fail in any part can be re-examined in this part at any subsequent examination on payment of the appropriate fee.

Part I

The examination in **Prosthetic Dentistry** including the Properties of Dental Materials will consist of :—

One paper of two hours' duration

A practical examination, including both clinical and laboratory tests, of six hours' duration.

The examiner shall be at liberty to test any candidate by means of oral questions.

Part II

The examination will consist of :—

Medicine : One paper of two hours' duration and an oral examination.

Surgery : One paper of two hours' duration and an oral examination.

Pharmacology and Therapeutics : One paper of two hours' duration and an oral examination.

Pathology and Bacteriology : One paper of three hours' duration and an oral examination.

Part III

The examination will consist of :—

Dental Surgery (including Special Pathology) : Two papers of three hours' duration.
an oral examination ;
a practical examination in Operative Dental Surgery ;
a clinical examination.

Orthodontics : One paper of two hours' duration ; a clinical examination.

The Examiners shall be at liberty to test any candidate by means of oral questions.

A candidate shall not be approved by the Examiners in any part of the Third Examination unless he has shown a competent knowledge in all the subjects of that part.

There will be no separate examination for Honours.

All answers to examination questions shall be written in English unless instructions are given to the contrary.

TIME TABLE

The time table of the examination, showing both the time and place of the written practical and oral examination, will be furnished to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

A provisional list of candidates who have passed the Third Examination or Parts thereof will be published on 21 August in the case of the June examination and on 15 January in the case of the November examination. The list will be published in alphabetical order in two parts, as follows :—

1. An Honours List

2. A Pass List

In order to be eligible for the award of Honours the candidate must either have passed Parts I, II and III, on the same occasion or have passed Parts II and III within two and a half years of passing Part I. Honours may be awarded to a candidate who is exempted from any subject or subjects on the ground of his having passed therein at the Second Examination for Medical Degrees or at the M.B., B.S. Examination. A candidate who has failed at any time in any part of the Final Examination is not eligible for the award of Honours.

In the Honours List the subject or subjects in which the successful candidates have distinguished themselves will be shown.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October and January.

2. A diploma for the Degree of B.D.S., under the Seal of the University, shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

COURSE OF STUDY AND SYLLABUSES

The course of study for the Third Examination normally extends over the third, fourth and fifth years, and part of the sixth year of study.

Syllabuses are as follows :—

Prosthetic Dentistry, including Properties of Dental Materials

A full time course of study extending over 12 months, or a part time course of study extending over an equivalent period.

The Theory and Practice of Dental Prosthetics including both Clinical and Laboratory procedures.

Lectures and demonstrations not less than 40 in all, together with 800 hours laboratory work.

A course of lectures and demonstrations in the Properties of Dental Materials not less than 10 in all.

Medicine

A course of lectures and demonstrations not less than 30 in all, in General Medicine with special reference to medical diseases and disorders most commonly associated with oral infection ; a three-months' course of Practical Medicine in the wards or the Medical Outpatients' Department of a recognized Hospital and a practical course in Anaesthetics extending over one month with a minimum of 20 administrations. The syllabus is as follows :—

Chief medical affections of the mouth, tongue, lips, gums, tonsils and palate.

Central Nervous System : Syphilis ; fits ; hysteria ; cerebral haemorrhage ; cerebral thrombosis ; and the main conditions affecting the cranial nerves.

Cardio-vascular System : Manifestations of cardiac failure ; aetiology of cardiac disease ; infective endocarditis ; hypertension ; angina pectoris ; coronary thrombosis ; and disorders of cardiac rhythm.

Respiratory System : Bronchitis ; pneumonia ; foreign bodies in air passages ; lung abscess ; tuberculosis ; emphysema ; asthma ; and massive collapse of the lung.

Gastro-intestinal Tract : Dysphagia ; gastritis ; peptic ulcer ; and carcinoma of the stomach.

Urinary System : Significance of uraemia ; testing for the presence of albumin and sugar in urine.

Haemo-poietic System : Anaemias ; leukaemias ; haemorrhagic diseases ; and agranulocytosis.

Lymphatic Glands : Conditions affecting the cervical glands.

Endocrine Glands : Thyrotoxicosis ; myxoedema ; Addison's Disease ; acromegaly ; osteitis fibrosa ; and diabetes mellitus.

Deficiency Diseases : Rickets and scurvy.

Infectious Diseases : The signs which affect the face and mouth.

Granulomata : Tuberculosis ; syphilis ; actinomycosis.

Miscellaneous : Focal sepsis ; jaundice ; alcoholism ; drug addiction ; oedema of face ; chronic arthritis.

Surgery

A course of lectures and demonstrations not less than 40 in all, extending over two terms, and a clinical appointment held for at least three months in the Surgical Out-patients' Department of a recognized Hospital. The syllabus is as follows :—

The general principles of Surgery and Surgical Pathology :—

Inflammation : Causes—vascular and structural changes ; clinical manifestations—treatment ; terminations.

Micro-organisms : A knowledge of the chief pathogenic micro-organisms and their relations to disease.

Infections : Acute and chronic abscess ; furuncle ; carbuncle ; cellulitis ; erysipelas ; septicaemia ; pyaemia ; toxæmia ; cancrum oris ; tuberculosis ; syphilis ; actinomycosis ; anthrax ; tetanus.

Wounds : Varieties ; complications ; treatment ; repair ; principles of asepsis and antisepsis and their application.

Blood Vessels : Injuries ; hæmorrhage and its arrest ; hæmophilia ; naevus ; aneurism ; arterio-sclerosis ; atheroma ; calcification ; thrombosis ; embolism ; varicosities.

Lymph Vessels and Glands : Lymphadenitis, its causes and terminations, including tubercular and syphilitic infections ; lymphangitis ; lymphadenoma ; secondary infections ; neoplasms, primary and secondary.

Bones : Injuries, fractures of bones of face ; inflammations, including caries ; necrosis ; neoplasms ; leontiasis ossia.

Joints : Injuries ; sprains ; dislocation of, diseases of, and limitation of movement in the temporo-mandibular joint.

Nervous System : Injuries to nerves ; causes of paralysis ; inflammations ; neuritis and neuralgia ; main affections of cranial nerves.

Mouth, Tongue, Lips, Tonsils, Gums, Palate : Chief surgical affections, including injuries and malformations.

Nose : Naso-pharynx and accessory sinuses ; chief surgical affections.

Salivary Glands : Injuries and diseases.

Submaxillary Cellulitis.

Anaesthetics : The main varieties and their applications in Dental Surgery.

Artificial respiration : Tracheotomy.

Pharmacology and Therapeutics

A course of lectures and demonstrations not less than 10 in all extending over one term including :—antiseptics, caustics, anaesthetics (general and local) and drugs acting on the heart and circulation. The application of Pharmacology in dental treatment.

Pathology and Bacteriology

A course extending over two terms and comprising :—

- (i) lectures and demonstrations, not less than 40 in all, in the principles of Pathology.
- (ii) lectures, demonstrations and practical classes, not less than 20 in all, in Bacteriology.

The courses of instruction shall include a practical acquaintance with the various subjects set out in the syllabus.

The syllabus is as follows :—

General Pathology.—Process of Inflammation. Processes of Infection and immunity. Fever and pyrexia. Repair of soft structures and of hard.

Disorders of the blood and circulation. Disorders of nutrition. Degenerations and retrogressive changes. Biology of neoplasms.

Bacteriology.—The principles of Bacteriology and their application to the prevention, diagnosis and treatment of disease, with special reference to the mouth. The morphology and cultural characteristics of representative micro-organisms. Immunological reactions and their applications.

Dental Surgery (including Special Pathology)

The practice of dental surgery extending over at least two and a half years, including :—

A pre-clinical course in Operative Dental Surgery.

Operative Dental Surgery.

Parodontics.

Minor Oral Surgery.

General and Local Anaesthesia.

Radiology.

Lectures and Demonstrations in Operative Dental Surgery, not less than 40 in all, and Special Pathology including the prevention of Oral Diseases, not less than 20 in all. Parodontal Disease, not less than 10 in all.

Orthodontics

A course of instruction in the principles and practice of Orthodontics extending over two terms, including lectures and demonstrations not less than 15 in all.

INSTITUTIONS RECOGNIZED FOR PURPOSES OF B.D.S. DEGREE

A list of the Institutions which are recognized by the University for the purposes of the B.D.S. Degree for External Students may be obtained on application to the External Registrar.

UNIVERSITY OF LONDON



COLLEGES
AND
INSTITUTIONS

**recognized by the University
for the purposes of Degrees
in the Faculty of Medicine
for External Students**

SENATE HOUSE
LONDON, W.C.1

September, 1953

INSTITUTIONS RECOGNIZED FOR PURPOSES OF M.B., B.S. DEGREES

The University accepts certificates for the complete course of Medical Education, including Clinical Medicine and Surgery, preparatory to the M.B., B.S. Degrees for External Students (except as hereinafter provided in special cases) from the following Institutions :—

ENGLAND AND WALES

London :—

Guy's Hospital Medical School
Middlesex Hospital Medical School
Royal Free Hospital School of Medicine
St. Bartholomew's Hospital Medical College
St. Mary's Hospital Medical School
St. Thomas's Hospital Medical School

For certificates in the subjects of the First and Second Examination for Medical Degrees and for the course in Hygiene :—

University College
King's College

For certificates in Physiology only for the Second Examination for Medical Degrees :—

Bedford College for Women

For certificates in the subjects of the Second and Third (M.B., B.S.) Examinations for Medical Degrees :—

Charing Cross Hospital Medical School
London Hospital Medical College

For certificates in the subjects of the Third (M.B., B.S.) Examination for Medical Degrees :—

King's College Hospital Medical School
St. George's Hospital Medical School
University College Hospital Medical School
Westminster Medical School

For certificates in Pharmacy and Materia Medica only (M.B., B.S.) :—
School of Pharmacy

For certificates in respect of part of the experience as Clinical Clerk and of part of the experience as Dresser for the Third Medical Examination :—

Hospital for Sick Children
Moorfields, Westminster and Central Eye Hospital
National Hospital for Nervous Diseases
Royal Cancer Hospital (Free)
Royal Eye Hospital
Western Ophthalmic Hospital, Marylebone Road

For certificates in respect of three months' experience as Clinical Clerk in the Gynæcological Wards or Out-Patient Department for the Third Medical Examination :—

Elizabeth Garrett Anderson Hospital
South London Hospital for Women and Children

Birmingham :—

The University with the Birmingham United Hospital

Bristol :—

The University with the Royal Hospital

Cambridge :—

The University Medical School with Addenbrooke's Hospital

Cardiff :—

University College of South Wales with the Cardiff Royal Infirmary
and The Welsh National School of Medicine

Leeds :—

The University with the General Infirmary

Liverpool :—

The University with the Royal Infirmary or Royal Southern Hospital
Stanley Hospital (for Clinical work only)

St. Paul's Eye Hospital (for Clinical Ophthalmology only)

Manchester :—

The Victoria University with the Royal Infirmary

Newcastle-upon-Tyne :—

The University of Durham Medical School with the Newcastle Royal
Victoria Infirmary

Oxford :—

The University Medical School with the United Oxford Hospitals
The Wingfield-Morris Hospital (for Orthopædics only)

Sheffield :—

The University with the Royal Sheffield Infirmary and Hospital

SCOTLAND

Aberdeen :—

The University with the Royal Infirmary

Dundee :—

University College with the Royal Infirmary

Edinburgh :—

The University with the Royal Infirmary

Glasgow :—

The University with the Royal Infirmary or the Western Infirmary

St. Andrews :—

The University (including University College, Dundee) and the
Dundee Royal Infirmary

NORTHERN IRELAND

Belfast :—

The Queen's University with the Royal Victoria Hospital ; Mater
Infirmorum Hospital

EIRE

Cork :—

University College with the North Charitable Infirmary and the
South Charitable Infirmary

Dublin :—

Trinity College School of Physic

The Royal College of Surgeons (including Carmichael College and the
Ledwich School)

The National University Medical School

each with one or more of the following Hospitals :—

Adelaide Hospital

Royal City of Dublin Hospital

Jervis Street Hospital

St. Laurence Hospital

Mater Misericordiae Hospital

St. Vincent's Hospital

Meath Hospital

Sir Patrick Dun's Hospital

Mercer's Hospital

Dr. Steeven's Hospital

For certificates in respect of three months' experience as Clinical Clerk in the Gynæcological Wards or Out-Patient Department for the Third Examination for Medical Degrees (M.B., B.S.):—
Rotunda Hospital

Galway :—

University College with the Central Hospital

BRITISH COMMONWEALTH

Adelaide :—

The University with the Royal Adelaide Hospital

Bombay :—

The University (Grant Medical College)

Seth Gordhandas Sunderdas Medical College

Cairo :—

School of Medicine (Kasr El-Ainy Hospital)

Calcutta :—

The University (Bengal Medical College)

Ceylon :—

The University, Colombo

Halifax, Nova Scotia :—

Dalhousie University

Lahore :—

The University Medical College

Lucknow :—

The University

Madras :—

The University Medical College

Malta :—

The University

Melbourne :—

The University with Melbourne Hospital and Alfred Hospital

Montreal :—

McGill University

New Zealand :—

The University of New Zealand with Dunedin Hospital

Sydney :—

The University with the Sydney Infirmary and the Prince Alfred Hospital

Toronto :—

The University

FEVER HOSPITALS

The following Fever Hospitals are recognized as institutions at which students may take the course of instruction prescribed in the curriculum in Medicine, preparatory to the M.B., B.S. degree examinations :—

ENGLAND AND WALES

Metropolitan :—

Brook Hospital, Shooter's Hill, Woolwich, S.E.18
 Eastern Hospital, Homerton Grove, E.9
 Grove Hospital, Tooting Grove, Tooting Graveney, S.W.17
 North-Eastern Hospital, St. Ann's Road, South Tottenham, N.15
 North-Western Hospital, Lawn Road, Hampstead, N.W.3
 Park Hospital, Hither Green, S.E.13
 Plaistow Hospital, E.13
 Royal Free Hospital, Liverpool Road Branch, N.1
 South-Eastern Hospital, Avonley Road, New Cross, S.E.14
 South Middlesex Fever Hospital, Isleworth
 South-Western Hospital, Landor Road, Stockwell, S.W.9
 Western Hospital, Seagrave Road, Fulham, S.W.6
 Willesden Municipal Hospital

Birmingham :—

City Hospital, Little Bromwich

Bristol :—

City Isolation Hospitals

Cardiff :—

City Isolation Hospital

Leeds :—

Seacroft Infectious Diseases Hospital

Liverpool :—

City Isolation Hospitals

Manchester :—

Monsall Hospital for Infectious Diseases, Newton Heath

Newcastle-upon-Tyne :—

City Hospital for Infectious Diseases, Walkergate

Sheffield :—

City Hospitals for Infectious Diseases :—

Winter Street Sanatorium

Lodge Moor Hospital

SCOTLAND

Aberdeen :—

City Hospital for Infectious Diseases

Edinburgh :—

City Hospital for Infectious Diseases

Glasgow :—

City Fever Hospital, Belvidere

City Fever Hospital, Ruchill

NORTHERN IRELAND

Belfast :—

The Belfast Fever Hospital

EIRE

Cork :—

Fever Hospital and House of Recovery

Dublin :—

Fever Hospital, Cork Street

St. Laurence Hospital

INDIA

Bombay :—

Arthur Road Infectious Diseases Hospital and the Maratha Tuberculosis Hospital

CEYLON

Infectious Diseases Hospital, Angoda

MENTAL HOSPITALS

Candidates who have taken courses on Insanity at Institutions outside the British Isles must make special application for the recognition of such courses.

The following are recognized as institutions at which students may take the course on Insanity prescribed in the curriculum in Medicine preparatory to the M.B., B.S. degree examinations :—

ENGLAND AND WALES

Metropolitan :—

Banstead Hospital, Sutton
 Belmont Hospital, Sutton
 Bethlem Royal Hospital and Maudsley Hospital, Monk's Orchard, Eden Park, Beckenham and Denmark Hill, S.E.5
 Bexley Hospital, Bexley
 Camberwell House, 33, Peckham Road, S.E.5
 Cane Hill Hospital, Coulsdon
 City of London Mental Hospital, Stone, Dartford
 Claybury Hospital, Woodford Bridge
 Friern Hospital, New Southgate, N.11
 Horton Hospital, Epsom
 Long Grove Hospital, Epsom
 Netherne Hospital, Coulsdon
 Peckham House, 112, Peckham Road, S.E.15
 St. Bernard's Hospital, Southall
 St. Ebba's Hospital, Epsom
 St. Pancras Hospital Mental Observation Unit.
 Springfield Mental Hospital, Upper Tooting, S.W.17
 Tooting Bec Hospital, Tooting Bec Road, S.W.17.
 West Ham Mental Hospital, Goodmayes, Ilford
 West Park Hospital, Epsom

Bedfordshire :—

Three Counties Mental Hospital, Arlesey, Hitchin

Berkshire :—

Wallingford

Buckinghamshire :—

Stone, Aylesbury

Cambridgeshire :—

Fulbourn

Cheshire :—

Parkside, Macclesfield, Chester

Cornwall :—

Bodmin

Cumberland :—

Cumberland and Westmorland Counties Mental Hospital, Carlisle

Derbyshire :—

Derby Borough Mental Hospital, Rowditch
Mickleover

Devon :—

Exeter City Mental Hospital, Digbys, Heavitree
Exminster
Moorhaven Hospital, Ivybridge

Dorset :—

Dorchester

Durham :—

Winterton

Essex :—

Brentwood (see also Metropolitan, *supra*)

Glamorgan :—

Cardiff City Mental Hospital

Gloucestershire :—

Barnwood House Hospital for Mental Disorders, Gloucester
Bristol Mental Hospital, Fishponds
County Mental Hospital, Wotton

Hampshire :—

Isle of Wight County Mental Hospital, Newport
Knowle
St. James' Hospital for Mental and Nervous Diseases, Portsmouth

Hertfordshire :—

Hill End Hospital and Clinic, St. Albans
Leavesden Hospital, Abbots Langley, Watford
Shenley Hospital, Shenley, near St. Albans

Kent :—

County Mental Hospital, Maidstone (see also Metropolitan, *supra*)

Lancashire :—

Lancaster
Manchester Royal Hospital for Mental Diseases, Cheadle
Prestwich
Rainhill
Whittingham
Winwick

Leicestershire :—

Carlton Hayes Hospital, Leicester
Towers Hospital, Leicester

Lincolnshire :—

Bracebridge Heath
Rauceby Hospital, Sleaford

Norfolk :—

Hellesdon Hospital, Norwich
Thorpe

Northamptonshire :—

Berrywood
St. Andrew's Hospital, Northampton

Northumberland :—

Newcastle City Mental Hospital
St. George's Hospital, Morpeth

Nottinghamshire :—

City Mental Hospital, Mapperley Hill
Nottinghamshire County Mental Hospital, Radcliffe-on-Trent

Oxfordshire :—

Littlemore

Shropshire :—

Salop Mental Hospital, Bickton Heath, Shrewsbury

Somerset :—

Tone Vale Mental Hospital, Taunton
Wells Mental Hospital

Staffordshire :—

Burntwood
Cheddleton
Stafford

Suffolk :—

Ipswich Borough Mental Hospital
Melton, Woodbridge

Surrey :—

Holloway Sanatorium, St. Ann's Heath, Virginia Water
Royal Earlswood Institution, Redhill
Brookwood
(See also Metropolitan, *supra*)

Sussex :—

Brighton County Mental Hospital, Haywards Heath
East Sussex County Mental Hospital, Hellingly
West Sussex County Mental Hospital, Chichester

Warwickshire :—

Central Hospital, Hatton
Rubery Hill Mental Hospital
Birmingham City Mental Hospital, Winson Green

Wiltshire :—

Devizes

Worcestershire :—

County and City Mental Hospital, Powick
Worcestershire Mental Hospital, Barnsley Hill, Bromsgrove

Yorkshire :—

East Riding Mental Hospital, Beverley
Hull City Mental Hospital
North Riding Mental Hospital, Clifton, York
West Riding Mental Hospital, Wadsley, Sheffield
West Riding Mental Hospital, Menston, Leeds
West Riding Mental Hospital, Wakefield
St. Luke's Hospital, Middlesbrough

SCOTLAND

Aberdeen :—

Royal Mental Hospital

Edinburgh :—Edinburgh District Mental Hospital, Bangour Village
Royal Hospital, Morningside*Glasgow* :—District Mental Hospital, Woodilee, Lenzie
Gartloch Mental Hospital
Royal Mental Hospital, Gartnavel*Larbet* :—

Royal Scottish National Institution

NORTHERN IRELAND

Belfast :—

Belfast Mental Hospital

EIRE

Dublin :—

Grangegorman Mental Hospital

CHANNEL ISLANDS

Jersey :—

Jersey Mental Hospital, St. Saviour

ISLE OF MAN

Mental Hospital, Union Mills

INDIA

Bombay :—

Northcote Police Hospital

Calcutta :—

Ranchi European Mental Hospital

Madras :—

Government Mental Hospital

CEYLON

Mental Hospital, Angoda

**INSTITUTIONS RECOGNIZED FOR PURPOSES OF
B.D.S. DEGREE**

The University accepts certificates for the complete course preparatory to the B.D.S. Degree for External Students, from the following Institutions :—

ENGLAND AND WALES

- (1) Courses in preparation for the Second and subsequent Examinations in Dental Surgery are available at the under-mentioned Schools of the University :—

Guy's Hospital Medical School
King's College Hospital Medical School
London Hospital Medical College
Royal Dental Hospital of London, School of Dental Surgery
University College Hospital Medical School

- (2) Courses in medical subjects only are available at the under-mentioned Schools of the University :—

Middlesex Hospital Medical School
 Royal Free Hospital School of Medicine
 St. Mary's Hospital Medical School

- (3) University of Birmingham Dental Department
 (4) University of Bristol Dental Department
 (5) University of Leeds School of Dentistry
 (6) University of Liverpool School of Dental Surgery
 (7) University of Manchester Dental Department

SCOTLAND

- (8) Incorporated Edinburgh Dental Hospital and School

HOSPITALS APPROVED FOR COURSE IN PRACTICAL MEDICINE AND CLINICAL APPOINTMENT IN SURGERY

ENGLAND AND WALES

London :

Charing Cross Hospital	St. Bartholomew's Hospital
Guy's Hospital	St. George's Hospital
King's College Hospital	St. Mary's Hospital
London Hospital	St. Thomas's Hospital
Middlesex Hospital	University College Hospital
Royal Free Hospital	Westminster Hospital

Birmingham :

General Hospital	Queen's Hospital
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Bristol :

Royal Infirmary	General Hospital
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Cambridge :

Addenbrooke's Hospital

Leeds :

General Infirmary

Liverpool :

Royal Infirmary	Royal Southern Hospital
Stanley Hospital	

Manchester :

Royal Infirmary

Newcastle-upon-Tyne :

Royal Infirmary

Sheffield :

Royal Infirmary	Royal Hospital
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SCOTLAND

Aberdeen :

Royal Infirmary

Dundee :

Royal Infirmary

Edinburgh :

Royal Infirmary

Glasgow :

Royal Infirmary

Western Infirmary

NORTHERN IRELAND

Belfast :

Royal Victoria Hospital

Mater Infirmorum Hospital

EIRE

Cork :

North Charitable Infirmary

South Charitable Infirmary

Dublin :

Adelaide Hospital

Royal City of Dublin Hospital

Jervis Street Hospital

Mater Misericordiae Hospital

Meath Hospital

Mercer's Hospital

St. Laurence Hospital

St. Vincent's Hospital

Sir Patrick Dun's Hospital

Dr. Steevens's Hospital

Galway :

Central Hospital

UNIVERSITY OF LONDON



REGULATIONS FOR THE DIPLOMA IN CLINICAL PATHOLOGY for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

DIPLOMA IN CLINICAL PATHOLOGY

The University grants a Diploma in Clinical Pathology of post-graduate standing to External Students. The Diploma is awarded by examination to students who have satisfied the University as to their previous training and/or experience in Clinical Pathology.

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have satisfied minimum University entrance requirements and been registered as an External Student preparing for the Diploma in Clinical Pathology; (b) hold and have in fact duly registered a qualification to practise medicine which is registrable in the United Kingdom, or hold a medical qualification which, although not so registered, is approved by the University; and have had previous clinical experience satisfactory to the Council for External Students; (c) produce evidence satisfactory to the Council for External Students that he has had adequate experience in all subjects of the examination. The evidence shall show that the candidate has conducted tests as a part of the routine work of the hospital department on all subjects of the examination; and (d) have obtained approval of candidature for the External Diploma in Clinical Pathology.

DATE OF EXAMINATION

The examination will be held once in each year in the week beginning on the last Monday in September.

APPROVAL OF CANDIDATURE

Candidates should normally apply for approval of candidature during the period January-February preceding the date of the examination. Candidates when applying for approval should furnish the evidence required under para. (c) of Qualifications for Admission above. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 8 March, applications may be accepted after this date, on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 8 August of the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 28 July. Candidates must apply to the External Registrar for the appropriate entry form and certificate of course of instruction, where prescribed. These forms will not be despatched by post from the University after 1 September, and must be returned duly filled in in accordance with these regulations not later than 8 September, when the candidate list will be closed. No entry can be accepted after the candidate list has been closed.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. The fee is £12 12s. for each entry.
2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account".
3. Conditions governing the Return of Examination Fees are printed in the General Regulations (see p. ix). In the case of the Diploma in Clinical Pathology examination no refund of part of the entry fee can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION

1. Candidates will be examined in the following four subjects :—
 - (1) **Morbid Anatomy and Histology**, including post-mortem work,
 - (2) **Bacteriology and Serology**.
 - (3) **Chemical Pathology**.
 - (4) **Haematology** and such other methods of laboratory examination as are generally used in hospital practice.
2. Candidates will be required to produce evidence of experience or training for a period of at least twelve months in each of the above subjects. These periods may run concurrently, provided that suitable facilities are available.
3. The examination will normally include practical examinations in the four subjects and an oral examination. The examination will occupy three days and shall include :—
 - (a) The examination of pathological material followed by written or verbal reports ;
 - (b) Questions on the theory and principles involved in the methods of examination and in the specific tests of pathological material ;
 - (c) The scope and application of laboratory examination to the diagnosis and treatment of disease and the interpretation of the results of such examinations.
4. All answers to examination questions shall be written in English unless instructions are given to the contrary.
5. No exemption is granted from any subject of this examination.

NOTIFICATION OF RESULT

1. A provisional list of successful candidates, arranged in alphabetical order, will be published by the External Registrar on the Saturday of the second week following that in which the examination concludes.
2. A copy of the Pass List will be sent to each successful candidate, and an individual communication to each unsuccessful candidate.

AWARD OF DIPLOMA

A diploma under the seal of the University shall be delivered to each successful candidate after the report of the examiners shall have been approved by the Senate.

UNIVERSITY OF LONDON



REGULATIONS

FOR DEGREES IN

PHARMACY

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Candidates for the Degree of Bachelor of Pharmacy as External Students are required to satisfy the minimum University and Faculty entrance requirements, to have been registered as External Students preparing for the Degree of Bachelor of Pharmacy, and to pass the Intermediate and Final Examinations.

The Degree is not in itself a qualification to practise ; students proceeding to this Degree with a view to practising as Pharmaceutical Chemists should, before commencing their course, apply for information to the Secretary to the Pharmaceutical Society, 17, Bloomsbury Square, London, W.C.1.

INTERMEDIATE EXAMINATION IN PHARMACY

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have satisfied the minimum University and Faculty entrance requirements ; and (b) have been registered as an External Student preparing for the Degree of B.Pharm.

Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced a course of study. Students for the July examination should normally apply for registration in the period October to December preceding the examination, and not later than 25 February. Students for the November examination should normally apply for registration in the period January to March preceding the examination, and not later than 17 September. **Students who apply to take the Final Examination less than three academic years from the date of registration are warned that an application for late registration, with a late fee of £2 2s. will be necessary when they apply for approval of candidature for the Final Examination.**

FACULTY REQUIREMENTS

A candidate who has matriculated by means of a General Certificate of Education will be required to have passed in Chemistry and Physics at Ordinary or Advanced Level.

DATE OF EXAMINATION

The examination shall be held twice in each year and shall commence during the week beginning on the first Monday after 28 June, and, in London only, on the Wednesday after the fourth Monday in November.

ENTRY TO EXAMINATION

The candidate list for the July examination will be opened on 11 February. Entry forms will not be despatched by post from the University after 18 March and the candidate list will be closed on 25 March. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make entry as early as possible. No entry can be accepted after the candidate list has been closed.

The candidate list for the November examination will be opened on 5 September. Entry forms will not be despatched by post from the University after 10 October and the candidate list will be closed on 17 October. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre in July must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

Each entry to whole examination	..	..	..	£	s.
Referred subject	..	..	..	6	6
Supplementary subject	..	..	..	2	2
Exemption in virtue of another examination :—	..	..	..	2	2
Complete exemption	..	..	..	No fee	
Partial exemption, per subject taken	..	..	..	2	2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the July examination after the last date of entry but not later than 1 June, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix). In the case of the November Examination no refund can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION

1. The examination will be a Pass Examination only, consisting of three subjects :—

(1) **Chemistry,**

(2) **Physics,**

(3) **Either Biology or Botany or General Physiology or Zoology.**

2. In each subject there will normally be two papers and a practical examination, but in Biology there will be two papers and two practical examinations ; the examiners shall be at liberty to test any candidate by means of oral questions.

3. No candidate shall be allowed to pass unless he has shown a competent knowledge in each of the three subjects, nor unless he has satisfied the examiners in the practical part as well as in the written part of the examination in each subject.

4. **Pure Mathematics** (two papers) shall be an additional subject to be taken at the option of the candidate. The candidate's performance in Pure Mathematics will not affect the result of the examination. There shall be no additional fee for the examination in Pure Mathematics provided that it is taken with the Intermediate Examination.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

6. A candidate who has passed the Intermediate Examination in Pharmacy will not be permitted to re-enter except as provided under the Regulations for Supplementary Subjects.

REFERENCE

1. A candidate who enters for the whole examination on one and the same occasion, but who fails to reach the required standard in one subject only, may be referred, i.e., he may be permitted to re-present himself for examination in that subject alone at one or more subsequent Intermediate Examinations in Pharmacy.

2. The examiners will recommend that a candidate be referred only if his failure in one subject is not serious and if his performance in the remaining subjects is good.

3. A candidate who has completed the Intermediate Examination after having been referred in one subject will be deemed for all purposes to have passed the examination in question on the date of completion.

SUPPLEMENTARY SUBJECTS

Candidates who have passed or been exempted from the Intermediate Examination in Pharmacy may enter for examination in one or more supplementary subjects.

EXEMPTIONS

1. *In virtue of Higher School Certificates and the General Certificate of Education :—*

(a) A candidate who (i) holds a Certificate or Certificates awarded on a Higher School Examination recognized by the Ministry of Education as an approved second examination in Secondary Schools and (ii) is qualified to proceed to the External Intermediate Examination in Pharmacy, may apply for exemption in respect of any subject or subjects endorsed on his Higher School Certificate or Certificates on the Principal (Main) or Additional Subject standard, provided that the subject(s) correspond to those which may be offered at the Intermediate Examination in Pharmacy.

A candidate who has not qualified for the award of a Higher School Certificate but who has been permitted to count successes gained in 1949 and 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirement, may apply for exemption in corresponding subjects of the Intermediate Examination in respect of these two subjects.

(b) A candidate who (i) holds a General Certificate or Certificates of Education awarded by one of the approved University Examining Bodies and (ii) is qualified to proceed to the Intermediate Examination in Pharmacy, may apply for exemption at that examination in any subject or subjects passed at the Advanced Level, provided that the subject(s) correspond to those which may be offered at the Intermediate Examination in Pharmacy.

(c) From 1 September 1952 all fees payable in respect of complete or partial exemption are abolished. Candidates who are required to take part of the examination to complete a partial exemption will be required to pay entry fees for the subject or subjects which they are required to take, but no additional fee for exemption from the remaining part of the examination. Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of

entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination, and who paid the six guinea fee to include a first entry in one or more subjects.

(d) A candidate who is required to pass in two subjects in order to complete his Intermediate qualification must satisfy the examiners in all such subjects at one and the same examination, and if he is only partially successful he shall be required on re-entry to offer all such completing subjects again.

(e) A candidate may, if he so desires, complete his exemption qualification by passing in the required additional subjects at a subsequent Higher School Examination or General Certificate of Education (Advanced Level) Examination, provided the subjects offered conform to the regulations. In this case all the subjects required must be passed at one and the same Higher School Examination or General Certificate of Education (Advanced Level) Examination.

(f) No certificate will be issued to candidates in respect of such exemption, but a notification will be sent to duly qualified candidates at their request, when the exemption has been completed, stating that they are qualified to proceed to the External B.Pharm. Examination on complying with the Regulations in all respects.

2. Candidates who have passed the Intermediate Examination in Science of this University or who in virtue of having passed an examination are entitled to exemption therefrom, may claim exemption from examination in the subjects in which they have so passed.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 20 August, the External Registrar shall publish a list of the successful candidates at the July examination ; for the November examination the list will be published on 7 January.

2. A copy of this Pass List will be sent to each successful candidate ; and an individual notification will be sent to each unsuccessful candidate.

3. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October for the July examination, and in January for the November examination.

4. Certificates of having passed the examination will not be issued except to qualified students applying for such certificates.

5. Each successful candidate will receive a Detailed Report on his results in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass ; D—Failure ; E—Bad Failure.

6. Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—
D—Failure ; E—Bad Failure.

7. Failure in a subject which includes a practical or oral examination indicates failure in the subject as a whole and no further information can be given regarding the candidate's performance in the various parts of the examination.

8. Detailed Result Reports will be sent to successful candidates from one to two months after the publication of the ordinary Pass List, but will be sent to unsuccessful candidates at the time when they are notified of the result of the examination.

9. Educational institutions in receipt of annual grants from public funds may apply for a statement of the Detailed Results of their candidates ; such applications must be accompanied by a list of the candidates' names, the name of the examination and the date at which it was taken. The results cannot be communicated until about two months after the publication of the Pass List, and each institution will have communicated to it the results of those candidates only who are registered as pursuing a course of study at that institution.

SYLLABUSES

Chemistry

[Two papers and a practical examination.]

The following outline is not to be regarded as a rigid syllabus of instruction, but is given in continuation of the syllabus for the Ordinary Level of the General Certificate of Education of the University of London for the general guidance of candidates as indicating the range of the written part (I) and the experimental part (II) of the examination in Chemistry.

The whole syllabus is to be treated in an elementary manner and as far as possible experimentally. More importance will be attached to a sound understanding of fundamental principles and standard experimental methods than to an acquaintance with advanced theoretical ideas.

I

The laws of chemical combination. History of the discovery of the composition of air and water. The atomic and molecular theories. Equivalent, atomic, and molecular weights and methods for determining them. Valency. Atomic structure in so far as it is necessary to explain simply (a) the different types of valency, and (b) the periodicity in the properties of the elements of atomic number 1 to 18.

The periodic classification of elements, as illustrated by the chemistry of : H, He, Ne, A, Li, Na, K, Cu, Ag, Be, Mg, Ca, Sr, Ba, Zn, Cd, Hg, B, Al, C, Si, Sn, Pb, N, P, As, Sb, Bi, O, S, Cr, F, Cl, Br, I, Mn, Fe, Co, Ni. The treatment of the descriptive chemistry should be extended to include the preparation and properties of the more important compounds of : H, B, C, N, P, As, O, S, Cl, Br, I, Na, K, Cu, Ag, Mg, Ca, Ba, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe.

[*Note.*—For the purposes of this syllabus, “important compounds” means (a) compounds in common laboratory use for work up to Intermediate standard, or (b) compounds which have well-known uses.]

Sources and common processes for the manufacture or production of : H, He, Ne, A, O, N, Cl, Br, I, C, P, S, Na, Cu, Ag, Mg, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe, Ni.

[*Note.*—A knowledge of metallurgical and other manufacturing operations will not be required except in broad outline.]

Common processes for the manufacture of the following materials : Na_2CO_3 , NaHCO_3 , NaOH , CaO , SO_2 , H_2SO_4 , NH_3 , HNO_3 , HCl , hypochlorites, chlorates, bleaching powder, CO_2 and the fuel gases.

The chemistry involved in inorganic qualitative and volumetric analysis (see Part II).

The chemistry involved in the detection of C, H, N, Cl, Br, I, and S, in organic compounds. Calculation of empirical and molecular formulae from experimental data.

Elementary principles of Organic Chemistry including the following : The quadrivalence of carbon and its power of forming stable bonds with non-metals and especially with itself. Relationship of structural formulae (excluding, except as mentioned below, the stereochemical aspect) of saturated open-chain hydrocarbons containing not more than 4 carbon atoms. Homology, Isomerism. Candidates should be able to give examples of structural isomerism, and should know why plane formulae are not universally acceptable, but they are not expected to be familiar with the formulae or behaviour of specific mirror-image or geometrical isomerides.

Typical properties conferred by substituents, emphasis being laid on the behaviour of groups rather than on the technique of preparation or recognition of individual substances. Nevertheless certain simple substances (mentioned below in parentheses) should be included among those selected as types ; candidates will be expected to be familiar with the usual origin or method of preparation and characteristics of these compounds. Substitution in saturated open-chain hydrocarbons (methane) by chlorine. The radicals C_nH_{2n+1} . Reactions of compounds $C_nH_{2n+1}Cl$ (Br or I) with alkali and ammonia. Alcohols of the general formula $R\cdot CH_2\cdot OH$ (methyl and ethyl alcohols), $R_2CH\cdot OH$, $R_3C\cdot OH$, and their behaviour towards sodium, phosphorus halides (or phosphorus together with halogens), hydrogen halides, oxidising agents, and dehydrating agents, including sulphuric acid. Formation of ethers (diethyl ether). Unsaturated hydrocarbons, C_nH_{2n} (ethylene). Addition of H_2 , Cl_2 , Br_2 , and HBr to olefins. Action of alkali on the products formed from olefins by addition of Cl_2 or Br_2 (acetylene). The carbonyl group in aldehydes, $R\cdot CHO$, and ketones, R_2CO (formaldehyde, acetaldehyde, acetone). The action of reducing and oxidising agents on these substances, and the addition of HCN to them. Monobasic carboxylic acids, $R\cdot CO_2H$ (formic and acetic acid). Reaction of acids with PCl_5 (acetyl chloride) and the behaviour of acid chlorides with water, alcohol, and ammonia. Esterification of acids (ethyl acetate) and the behaviour of esters towards acids, alkalis, and ammonia. Acid anhydrides (acetic anhydride), amides (acetamide) and their hydrolysis. Amines, RNH_2 , R_2NH and R_3N (methylamine, dimethylamine, trimethylamine).

Modifications of group function as illustrated by the following : Difference in the properties dependent on the group OH in alcohols and in acids. Differences exhibited by the group $C = O$ in aldehydes and ketones on the one hand, and in acids, esters, etc., on the other. Differences in the properties of the NH_2 group in amines and amides.

The elementary principles of Physical Chemistry, which will find illustration throughout the subject matter of the syllabus. The following topics should be included among those studied : The properties of gases : The laws of Boyle, Charles, Avogadro, Gay Lussac, and Graham, and the law of partial pressures. Difference of specific heats of gases at constant pressure and at constant volume. Ratio of the specific heats and its connection with atomicity treated empirically. Determination of molecular weights of gases and vapours. Thermal dissociation. The properties of solutions : Distribution law. Henry's law. Osmotic pressure. Proportionality of lowering of vapour pressure, raising of boiling point, and lowering of freezing point to molar concentration. Determination of molecular weights in solution. The essential differences between colloidal and true solutions. Electrolysis and electrolytic dissociation. Chemical equilibrium and simple applications of the law of mass action. Le Chatelier's principle. Solubility product. Simple treatment of the strength of acids and bases, indicators, and the hydrolysis

of salts. Effect of concentration, temperature, and catalysts on rate of reaction. Exothermic and endothermic reactions, Hess's law.

II

Practical Examination

Candidates are permitted to bring for use in the practical examination any book or books they desire, including their own laboratory note-books.

Qualitative analysis of simple mixtures of not more than four inorganic radicals. (Phosphate separations will not be required.)

Preparation and use of volumetric solutions of :—acids and alkalis, potassium permanganate, potassium dichromate, sodium thiosulphate, iodine, arsenious oxide, silver nitrate and potassium thiocyanate.

Candidates may also be required to examine the action of heat and reagents on substances supplied and to identify well-known products, including gases, produced in the reactions. The practical exercises may also include the preparation and purification of substances by methods involving solution, precipitation, crystallization, distillation and sublimation.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

- (1) Centrifuge.
- (2) Centrifuge tubes.
- (3) Water bath with cover pierced to take centrifuge tubes.
- (4) Two long dropping pipettes.
- (5) Micro burners.
- (6) Wash bottles 100 cc. Polythene squeezing type.
- (7) Crucibles 25 mm. and 15 mm.
- (8) Spotting tiles (porcelain) and microscope slides.
- (9) Assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in., and block to hold these and centrifuge tubes.
- (10) Rack for dropping pipettes.
- (11) Long thin spatula.
- (12) Whatman papers (No. 120), 2 in. squares.
- (13) Small porcelain dish.
- (14) Forceps and tube holders.
- (15) Anti-bumping tubes to fit in centrifuge tubes.
- (16) Small conical flask 10 ml.
- (17) Pyrex tube fitted for testing evolved gases.
- (18) Reagents. Strong acids in Jena T.K. bottles ; other common reagents in bottles fitted with dropping pipettes.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Physics

[Two papers and a practical examination.]

Candidates will be expected to show an acquaintance with the fundamental principles of mechanics up to the standard of the Ordinary Level of the General Certificate of Education of the University of London, and to have acquired a general knowledge of the apparatus by which the elementary principles of Physics are illustrated and applied.

General Properties of Solids, Liquids, and Gases

Relation between volume and pressure in gases. Friction and viscosity. Surface tension. Diffusion. Osmosis. Stretching of wires.

Heat

Temperature. Instruments for the measurement of temperature. Expansion of solids, liquids, and gases with the rise of temperature, isothermal and adiabatic expansion. Quantity of heat. Specific heat. Change of state. Latent heat. Vapour pressure. Boiling point. Dew-point. Formation of cloud, fog, and dew. Conduction. Definition of thermal conductivity. Convection. Radiation. Newton's Law of cooling. The mechanical equivalent of heat and modes of determination. The conservation of energy.

Sound

The production and propagation of sound. Nature of wave-motion. Amplitude. Wave-length. Frequency. Experimental determination of the velocity of sound in air. Effect of change of temperature on the velocity. Reflexion. Determination of frequency by simple methods. Experimental investigation of the modes of vibration of strings by means of the sonometer. Experimental investigation of the vibrations of air in pipes by resonance to tuning forks. Organ pipes. Position of nodes and antinodes.

Light

Propagation of light. Laws of reflexion and refraction. Photometry. Reflexion at plane and spherical surfaces and the formation of images. Refraction at plane surfaces and by prisms. Minimum deviation. Chromatic dispersion. The general laws of radiation: Visible, ultra-violet, infra-red. Emission and absorption. Heating effects of radiation. Phosphorescence and fluorescence. The formation of images by single lenses. Long and short sight and their correction by lenses. The combination of two lenses to form a simple telescope or microscope. Measurement of velocity of light. Simple properties of polarised light.

Magnetism and Electricity

Properties of magnets. Simple phenomena of magnetisation. The magnetic field: lines of force. The law of magnetic force. Magnetic moment. Intensity of magnetisation. The earth as a magnet. The magnetic properties of iron and the elementary laws of the magnetic circuit. The simpler phenomena of electrified bodies. Conduction and insulation. Electrification by friction and by induction (influence). Distribution of electrification on conductors. Electric field; strength of field. The law of electric force. Potential. Capacity. Energy of charge. Electroscopes and electrometers. Electric current. Magnetic field of current. Magnetic measurement of current. Galvanometers. Work done by an electric current. Electromotive force. Difference of potential. Resistance. Ohm's Law. Wheatstone's Bridge. Potentio-

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meter. Resistance of cells. Volt. Ohm. Ampere. Ammeters. Voltmeters. Heating effects of currents. Elementary phenomena of electrolysis : Faraday's Law. Voltameters. Primary and secondary batteries. Action on current circuits in a magnetic field. Electromagnetic induction : Faraday's Law ; Lenz's Law ; induction coil. A thermo-electric couple. Simple phenomena of discharge in gases.

Practical Examination

[The following scheme is not exhaustive, and is intended merely to show the general nature of the exercises at the practical examination. The examiners are not precluded from setting other exercises and practical problems illustrative of the principles set forth in the syllabus.]

Measurements of length, mass, and time, involving eye-estimation of tenths of a division, use of vernier, use of the balance (weighing to one centigram), use of a seconds-hand watch. Determination of volumes. Specific gravities of solids, powders, and liquids. Use of the hydrometer. Verification of Boyle's Law. Determination of the centre of gravity of a plate. Determination of g by simple pendulum. Determination of velocity of sound in a tube by resonance with a fork. Use of the sonometer. Use of thermometers and determination of fixed points. Simple methods of determining specific heat and latent heat of fusion and of evaporation. Determination of dew-point. Use of simple photometers. Focal lengths of mirrors. Focal lengths of lenses. Arrangement of two lenses to make simple forms of telescope, microscope, and projection lantern. Simple use of spectrometer. Tracing the path of a ray of light through a block of glass and deduction of refractive index. Refractive index by method of apparent thickness. Tracing the lines of force in the neighbourhood of a magnet. Comparison of magnetic moments and fields. Measurement of resistance of wires and cells. Comparison of electromotive forces with potentiometer. Measurement of electro-chemical equivalent.

Candidates are required to bring to the practical examinations their *original* note-books which must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory, for inspection by the examiners. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work. These note-books must be taken away by the candidates at the close of the examination.

Biology

[Two papers and two practical examinations.]

1. The general structure, physiology and life-history of :—*Amoeba*, *Paramecium*, *Hydra*, earthworm, cockroach, dogfish, frog, and rabbit ; *Chlamydomonas*, *Pleurococcus*, *Spirogyra*, *Fucus*, *Dryopteris* and of the flowering plant, as illustrating various grades in animal and plant organization. The salient distinctions between sedentary and motile organisms.

2. The nature of protoplasm. The structure and physiology of the cell ; cell-division ; gamete-formation and its relation to the mechanism of heredity. Cell-differentiation and tissue-formation, including an elementary knowledge of the histology and functions of :—epithelia, blood, connective, skeletal, muscular and nervous tissues of animals and of the epidermis, parenchyma, collenchyma, sclerenchyma, xylem, phloem, and the primary and secondary meristems (including cork formation) in plants. The structure and functions of the more important organs of a flowering plant and of the mammalian body.

3. Sexual and non-sexual reproduction ; parthenogenesis.
4. The embryology of the flowering plant. The elements of vertebrate embryology with special reference to (a) cleavage and origin of germ layers in *Amphioxus*, the frog, the fowl and the rabbit ; (b) the formation of the embryonic membranes in the fowl and the rabbit ; (c) the outlines of organogeny as illustrated by the study of the fowl as far as the end of the third day of incubation ; (d) the modes of nutrition during development.
5. An elementary knowledge of carbohydrates, fats and proteins and their recognition by simple chemical tests.
6. Nutrition in plants and animals. Photosynthesis. The commonly cultivated food plants and their nutritional significance. An elementary knowledge of the soil as it affects plant life, and the importance of nitrates, sulphates and phosphates to the plant.
7. Digestion, absorption and assimilation in animals. An elementary knowledge of vitamins. The nature of enzyme action and the transport and storage of food material in animals and plants.
8. Respiration and the energy changes involved. Excretion. The water relations of plants and animals. Growth. Stimulus and response in plants and animals. An elementary knowledge of the endocrine system in animals.
9. The parasitic and saprophytic modes of life as exemplified by *Pythium*, *Mucor*, the yeast plant, the bacteria and *Cuscuta* ; *Monocystis*, the malarial parasite, the tape-worm and a nematode parasite of plants. (A knowledge of the structure and life-history of these organisms only so far as it is of importance in relation to the special mode of life.) Insects as pests (e.g., Cabbage white butterfly), as pollinators (e.g., Bee) and as vectors of disease (e.g., *Anopheles*, *Aphis*).
10. The principal facts of heredity, including a knowledge of simple Mendelian experiments, the evidence for evolution, and an outline of the principal theories of the mode in which it takes place.

Practical Work

The practical work will be based on the above syllabus and should include :—

1. Dissection or microscopical examination of the animal and plant types cited.
2. In addition to the general external and internal anatomical features of the earthworm, cockroach, dogfish, frog and rabbit, the candidate is expected to have made the following special dissections.

Cockroach (a) Preparation of salivary glands and of mouth parts.

Dogfish (b) Heart, afferent and efferent branchial systems.
(c) Brain and cranial nerves.

Frog (d) Heart and principal vessels of the arterial and venous systems.
(e) Spinal and sympathetic nerves ; removal of brain and spinal cord.
(f) Urinogenital system.

Rabbit (g) Heart and principal vessels of arterial and venous systems. (The heart of a sheep should be examined.)

- (h) Removal and gross anatomy of brain.
- (i) Urinogenital system.
- (j) The eye of an ox.

3. In the study of the mammalian skeleton the skull of the dog will be substituted for that of the rabbit.

4. Microscopical preparation and examination of suitable animal and plant tissues.

5. Simple experiments in plant physiology, and detection of food stores by simple chemical tests.

6. A study of the external changes during development of the frog from fertilisation to the end of metamorphosis. The examination of whole mounts and representative sections illustrating the development of the frog to the beginning of germ-layer formation and of the chick during the first, second and third days. The external features of a fairly advanced mammalian embryo attached to the wall of the uterus by the umbilical cord (museum specimen).

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work. These note-books must be taken away by the candidates at the close of the examination.

Botany

[Two papers and a practical examination.]

Morphology

The structure and properties of the cell. The plant body : its structure, development and modifications. Nuclear and cell division.

Special Morphology, Reproduction and Taxonomy

The general characters of the following groups :—

Bacteria.

Fungi, especially *Mucor*, *Penicillium*, *Saccharomyces*, any common gill-bearing fungus, and a plant pathogen.

Algae, especially *Chlamydomonas*, *Spirogyra*, *Vaucheria* and *Fucus*.

Bryophyta, especially *Pellia*, and *Funaria*, the latter with special reference to its life history, and without detailed treatment of the sporophyte.

Pteridophyta, especially *Dryopteris*, and the special features of *Selaginella*.

Gymnosperms, especially *Pinus*.

Angiosperms, a study of the morphology and biology of the flowers, with some training in the use of a flora. Family characters not to be emphasized.

Elements of Physiology

The mineral nutrition and water relations of plants.

Outlines of metabolic changes in the plant, especially respiration and photosynthesis.

Growth.

Geotropism and phototropism.

An elementary knowledge of the soil in relation to the plant.

Elements of genetics and their cytological basis. Evolution.

Practical Examination

The practical work will include the dissection and examination of plants or parts of plants, and the reference to the systematic position of the plants or parts of plants comprised in the foregoing syllabus. Simple experiments in practical physiology may be set.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work. These note-books must be taken away by the candidates at the close of the examination. Candidates may bring their own stains to the practical examination, but double staining is not desired. Candidates will be permitted to provide for themselves and use hand microtomes if they so desire.

General Physiology

[Two papers and a practical examination.]

The following outline is not to be regarded as a rigid syllabus but is given for the guidance of candidates as indicating the range of the theoretical and the practical part of the examination :—

1. The fundamental phenomena of life.
2. The cell. Differentiation of structure and function of cells. Cell division.
3. Elementary biophysics including surface tension, diffusion, osmosis, cell permeability and the colloidal state.
4. Elementary chemistry of proteins, carbohydrates and fats ; their origin, fate and significance in living matter.
5. Source and transformation of energy in living organisms. The relation between mechanical, chemical and thermal changes.
6. Enzyme action.
7. An elementary knowledge of mammalian physiology along the following lines :—
 - (a) The properties of muscle.
 - (b) Chief constituents of blood and their functions.
 - (c) General arrangement of the circulatory system. The heart and blood vessels and their control.
 - (d) Mechanism of respiration, the control of pulmonary ventilation and gaseous interchange.
 - (e) Secretion, digestion and absorption.
 - (f) Principles of nutrition and metabolism.
 - (g) Excretion. The formation and composition of urine.
 - (h) Reproduction.

- (i) Chemical co-ordination and internal secretion.
- (j) Nervous co-ordination. General arrangement of the nervous system and a brief survey of the functions of its different parts. Reflex action.
- (k) The general principles of sensation.

Practical Examination

Candidates will be expected to have made a practical study of the following :—

1. Elementary experiments illustrating the phenomena and laws dealt with in the theoretical course.
2. The properties of skeletal muscle.
3. Factors influencing the heart beat, e.g., temperature, ions, electrical stimulation, exercise. Experiments on blood pressure in man.
4. Factors influencing pulmonary ventilation in man. Oxygen capacity and haemoglobin content of blood.
5. Simple experiments on hydrogen ion concentration and "buffering."
6. Experiments on the chemical properties and the digestion of the foodstuffs.
7. Detection of the chief constituents of urine. Estimation of urea.
8. Experiments on the field of vision, the "blind spot" and accommodation of the eye.
9. Staining and mounting of paraffin sections and the fixing and staining of fresh tissues. The recognition of the chief tissues and organs of the mammalian body.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination. Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Zoology

[Two papers and a practical examination.]

1. A study of the structure and of the elementary physiology of the rabbit.
2. The structure, mode of life and life-history of the following animals, to illustrate the general characteristics of animal organization :—
Amoeba, Euglena, Paramecium, Hydra, Obelia, the earthworm, the crayfish, *Amphioxus*, the dogfish, frog and rabbit.
3. Elementary physiology ; metabolism ; nutrition (digestion, assimilation and food storage) ; respiration, excretion, movement, response to stimuli and reflex action ; growth and reproduction. The differences between plants and animals.
4. The modifications of structure, habit and life-history associated with parasitism (including the mode of transmission from host to host)

as exemplified by *Monocystis*, *Trypanosoma*, the malarial parasite, the liver-fluke and the tape-worm.

Symbiosis.

5. The principles of classification and nomenclature. A discussion of the systematic position of the animals mentioned in paragraphs 2 and 4, and of their place in their respective phyla, and of these phyla in the animal kingdom.

6. The structure of a cell. Cell division. The multi-cellular organism illustrating morphological differentiation and the division of labour. The essential characteristics of the following : epithelial tissues ; connective and supporting tissues (including the process of ossification) ; blood and lymph ; muscular tissues ; nervous tissues.

7. Sexual and asexual reproduction. The chief types of ova. Gametogenesis. Fertilisation and cleavage. The germ layers and their formation in amphioxus, frog and chick. The development and metamorphosis of the frog. The development of the chick up to the end of the third day of incubation. The development and functions of the foetal membranes of the chick and mammal.

8. Variation and heredity, including a simple treatment of the facts of genetics and nuclear cytology.

9. The evidence bearing on the occurrence of organic evolution. The theories of Lamarck and Darwin as to the method of evolution.

Practical

Observations on living animals should be made wherever possible. Candidates are expected to make adequate labelled drawings of all the preparations they examine and of all the dissections they make.

1. The dissection, or microscopical examination of whole mounts and sections, of the animals mentioned in paragraphs 2 and 4 (except the malarial parasite and *Trypanosoma*).

The list of animals may be changed from time to time, but two years notice of any change will always be given.

2. The examination of the skeleton of the vertebrate types mentioned in paragraph 2, together with the skull of the dog.

3. The examination of preparations representing the chief varieties of the tissues mentioned in paragraph 6.

4. The examination of prepared sections of the following vertebrate organs :—skin, stomach, intestine, liver, kidney, ovary, testis and spinal cord.

5. The preparation of stained permanent mounts of suitable whole animals, parts of animals and tissues.

6. A study of the external changes during the development of the frog from fertilization to the end of metamorphosis.

7. The examination of whole mounts of and representative sections through :—

(a) The early stages of frog development to the time of the first appearance of the external gills.

(b) Stages illustrating the development of the chick during the first, second and third days.

Practical Examination

The candidate must be prepared to examine microscopically, to dissect, and to describe specimens or parts of the animals comprised in paragraphs 2 and 4 in the foregoing syllabus and to determine the zoological position of specimens in accordance with paragraph 5 above.

Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work. These note-books must be taken away by the candidates at the close of the examination.

Pure Mathematics

[Two papers.]

The theory of quadratic equations. The convergence of the geometric series. Permutations and combinations, including simple applications to probability. The binomial theorem for positive integral indices. The theory of indices. The nature and use of logarithms.

The geometry of similar rectilinear figures. Mensuration of plane rectilinear figures. The angles made by planes and straight lines with one another. Mensuration of simple solid figures, including the tetrahedron, cylinder, cone and sphere (the methods of the calculus may be used where suitable). Rectangular cartesian co-ordinates applied to the straight line, circle, parabola, ellipse, and hyperbola.

Plane trigonometry up to and including the solution of triangles. Trigonometric, exponential, and logarithmic functions, and their graphs.

The definition of a derivative. Differentiation of x^n (n an integer, positive or negative), $\sin x$, $\cos x$, $\tan x$, e^x , and $\log x$. Differentiations of a sum, a product, a quotient, and in simple cases of a function of a function. Definite and indefinite integration of the above functions and of simple functions of them. Areas and volumes. Representation of equations by curves, with easy applications. Simple examples on maxima and minima.

B.PHARM. DEGREE

The B.Pharm. Examination will be divided into two Parts. Successful candidates will be awarded First or Second Class Honours or a Pass Degree.

FACULTY REQUIREMENTS

A candidate who has matriculated by means of a General Certificate of Education will be required to have passed in Chemistry and Physics at Ordinary or Advanced Level.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to Part I each candidate must (a) have satisfied minimum University and Faculty entrance requirements and been registered as an External Student preparing for the Degree of B. Pharm.; (b) have passed or obtained exemption from the Intermediate Examination in Pharmacy in Chemistry, Physics and one Biological subject, at least two academic years previously, except that a candidate who has been referred at the Intermediate Examination or who, being entitled to partial exemption, has to pass in one subject to complete his exemption, must have completed the Intermediate Examination or exemption therefrom at least one academic year previously; (c) have completed the prescribed course of study at one of the institutions recognized by the University for the purpose (see page 1131); and (d) have obtained approval of candidature for Parts I and II of the B.Pharm. Examination within three months of having commenced his course of study for Part I.

In certain circumstances, training in the Pharmacy Department of a University in Great Britain may be accepted as part fulfilment of the prescribed course mentioned under (c) above.

2. To be admitted to Part II, each candidate must (a) have been registered as an External Student at least three academic years previously; (b) have passed Part I or have passed in all but one subject, in which he may have been referred, at least one academic year previously; (c) have completed the prescribed course of study at one of the institutions recognized by the University for the purpose (see page 1131); and (d) have obtained approval of candidature for the examination in accordance with the Regulations.

3. When making entry to the examination each candidate will be required to submit a certificate (signed by the Principal or other person authorized by the governing authority of an institution recognized for the purpose by the University) that subsequent to passing the Higher School Certificate Examination, the General Certificate of Education (Advanced Level) Examination, or the Intermediate Examination, or to his entering for the examination in which he has been referred in one subject, or in virtue of which he is entitled to exemption in two subjects, he has followed the complete course of instruction required by such institution or institutions in each of the subjects of the examination.

4. Further, when making entry for Part I each candidate will be required to submit a certificate (signed by the Principal or other person authorized by the governing authority of an institution recognized for the purpose by the University) that during his course of study he has followed a course of study in Pure Mathematics to the satisfaction of the Principal of the college, the syllabus in Pure Mathematics to be

that prescribed as an Additional Subject at the Intermediate Examination in Pharmacy. Such a certificate will not, however, be required of any candidate who has passed in Pure Mathematics at an Intermediate Examination of this University or who has obtained a Higher School Certificate with Pure Mathematics at Principal (Main) Subject standard or has passed in that subject at the Advanced Level at the General Certificate of Education Examination.

[*Note.*—The course for Part I should be so arranged that in each 100 hours 32 should be allotted to Pharmaceutics, 38 to Pharmaceutical Chemistry, 15 to Pharmacognosy, and 15 to Pharmacology.)

DATE OF EXAMINATION

The examination shall take place once in each year, Part I beginning on the second Monday in June, and Part II beginning on the first Monday after 28th June.

APPROVAL OF CANDIDATURE

Candidates should normally apply for approval of candidature for the two Parts of the examination within three months of the commencement of their course of study for Part I. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature within this period, application may be accepted after this on payment of a late fee of £1 1s. which is not returnable, but no application for either Part will be accepted after 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 20 December. Entry must be made on the appropriate form which may be obtained on application to the External Register. Candidates are advised to make application for entry papers and to send in the completed entry, together with the course certificate specified above, as early as possible. Entry forms will not be despatched by post from the University after 25 January, and the candidate list will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.	d.
Entry to either Part	6	16	6
Entry for referred subject at Part I	2	2	0

Fees paid between 1 September 1949, and 1 September 1952, for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken before 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix).

SCHEME OF EXAMINATION

1. The examination is divided into two Parts and normally candidates must pass Part I before they may enter for Part II. Nevertheless candidates referred in one subject of Part I may take this referred subject at any subsequent occasion either alone or with Part II.

Candidates who take their referred subject with Part II and are successful at Part II but fail in their referred subject, will be credited with Part II, but the Degree cannot be awarded until such candidates have passed in their referred subject.

2. All candidates must offer and pass in the four subjects of Part I and in two subjects of Part II, and further, candidates must have their choice of subjects at Part II approved by the authorities of the institution they are attending. The subjects shall be as follows :—

<i>Subjects</i>		<i>Examinations</i>	
		<i>Written</i>	<i>Practical</i>
Part I			
1. Pharmaceutics	.. ..	3 three-hour	2 three-hour
2. Pharmaceutical Chemistry	.. ..	2 three-hour	1 six-hour and 1 three-hour
3. Pharmacognosy	.. ..	1 three-hour	2 two-hour
4. Pharmacology	.. ..	1 three-hour	1 four-hour
Part II			
Two of the following :—			
5. Pharmaceutical Chemistry	.. ..	3 three-hour	2 days
6. Pharmacognosy	.. ..	2 three-hour	2 days
7. Pharmacology	.. ..	2 three-hour	2 days
8. Pharmaceutics	.. ..	3 three-hour	2 days
9. Pharmaceutical Engineering	.. ..	
Science	.. ..	4 three-hour	an examina- tion of candi- dates' course- work and an oral examina- tion.

3. The standard of the examination in Part I is to be that which would normally be required of a whole-time student after a course extending over two years.

4. The examiners shall be at liberty to test any candidate by oral questions.

5. No candidate shall be allowed to pass unless he has shown a competent knowledge in each of the subjects offered, nor unless he has satisfied the examiners both in the practical and written part in each subject offered. For each of the subjects equal importance is attached to the written and practical parts of the examination.

6. Consideration will be given by the examiners to candidates' practical note-books, which must be brought to the practical examinations, and have been duly certified by a responsible teacher. Candidates are permitted to bring for use in the practical examination at the discretion of the examiners, any books or books, including their own laboratory note-books.

7. In Pharmaceutical Engineering Science the course work submitted must be carried out at a duly recognized institution and be certified by the candidates' teacher or teachers in that subject.

Each candidate will be required to submit his course work for inspection on each and every occasion on which he presents himself for examination, and on each occasion only such course work as is submitted will be considered by the examiners.

A student who fails to satisfy the examiners in course work will be notified that he has failed in this part of the subject and consequently in the subject as a whole.

Candidates will receive instructions regarding submission of course work at the time of entry to the examination.

8. All answers to examination questions shall be written in English unless instructions are given to the contrary.

[*Note.*—There are no exemptions from this examination, except as follows :—

A candidate holding the degree of B.Pharm. taken under the old regulations may be permitted to enter for the Degree of B.Pharm. (with Honours) under the new regulations provided he applies for and gains exemption from Part I and subsequently completes a prescribed course of study at one of the institutions recognized by the University for the purpose, and has been registered as an External Student preparing for the B.Pharm. Examination (with Honours) and obtained approval of candidature for that examination within three months of having commenced his course of study for that examination.

Such a candidate will be required to take Part II and may be submitted to an oral test which may cover the scope of Parts I and II; in assessing the result the examiners will take into consideration the candidate's performance in the B.Pharm. under the old regulations, in Part II and in the oral examination, if imposed.]

REFERENCE

1. A candidate at Part I who fails to reach the minimum standard in any one subject only may be referred, i.e., he may be permitted on the recommendation of the examiners to present himself in that subject at any subsequent examination, either alone or with Part II.

2. A candidate may be credited with Part II, notwithstanding that he fails in his referred subject, but in this case the Degree cannot be awarded until the candidate has completed Part I by passing in his referred subject.

3. The examiners will recommend that the candidate be referred only if his failure is not serious, and if his performance in the remaining subjects is reasonably good.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 12 August the External Registrar shall publish a provisional list of the candidates successful at the examination arranged in alphabetical order in four categories, First Class Honours, Second Class Honours, Pass, and Part I. No other notification will be given to candidates successful at Part I of the examination.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.Pharm. under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor are limited to those who were awarded a degree during the preceding year.

SYLLABUSES

PART I

Pharmaceutics

1. The historical development of Pharmacy.
2. The physico-chemical principles involved in pharmaceutical operations.
3. A consideration of the following unit operations as applicable to pharmaceutics: Size reduction; Mixing; Size separation; Filtration; Centrifugation; Extraction; Evaporation; Distillation; Drying.
4. The formulation, preparation, preservation and storage of drugs and pharmaceutical preparations.
5. A fundamental consideration of microbiology.
6. Immunological preparations, principles underlying their preparation and use.
7. Disinfectants, antiseptics and preservatives including bacteriostatics and fungistatics. Their formulation and evaluation. The factors governing their efficiency. Antibiotics.
8. The principles of sterilisation and asepsis and their application to pharmaceutical operations, preparations and materials, including air, blood and blood products, surgical dressings, ligatures and sutures. Tests for the sterility of preparations and materials.
9. The posology of drugs including modes of administration and factors governing dosage.
The compounding and dispensing of medicaments.
10. *The law relating to Pharmacy.* The candidate will be required to have a knowledge of the following enactments and the subordinate legislation made under them, in so far as they are applicable to the practice of pharmacy in Great Britain:—the Pharmacy and Poisons Acts, 1852 to 1941; the Dangerous Drugs Acts, 1920 to 1950; the Acts relating to the National Health Service; the Shops Act; the Protection of Animals Act; the Food and Drugs Act; the Venereal Disease Act; the Cancer Act; the Therapeutic Substances Act; the Penicillin Act; the Radio-Active Substances Act; and the Acts relating to the sale of spirits (including methylated spirits) and medicated wines and the sale of abortifacients.

Practical

A general course illustrative of the theoretical section of this syllabus, including the making of preparations, the correct dispensing of prescriptions, the detection of unusual doses, and the completion of preparations in a proper manner ; the preparation of sterile medicaments and materials; testing for sterility ; viable and dead bacterial counts ; the measurement of bactericidal and bacteriostatic values.

Pharmaceutical Chemistry*General*

- (a) An elementary treatment of theories of atomic structure, Pauli exclusion principle ; periodic table and the electronic structure of the elements ; typical and transition elements ; electrovalency and covalency ; radio-activity, natural and induced ; isotopes and mass spectrograph ; use of isotopes as tracers.
- (b) The general character of the elements and their compounds as indicated by their position in the periodic table and the electronic structure of their atoms, as exemplified by the behaviour of their oxides, hydrides and chlorides ; co-ordination compounds.
- (c) The preparation and properties of the elements and compounds of pharmaceutical importance or of use in organic syntheses and degradations.
- (d) The occurrence of impurities in medicinal chemicals and substances used in pharmacy ; the principles underlying qualitative and quantitative analysis ; the principles underlying tests for purity.
- (e) General physical properties of gases, liquids and solids.
- (f) Solutions of gases, liquids and solids in liquids. Raoult's Law ; distillation of liquid systems ; distribution between immiscible solvents, partition chromatography ; elementary treatment of the Phase Rule.
- (g) Physical measurements and molecular structure. Molecular weight determinations ; additive and constitutive properties ; dipole moments ; light absorption ; polarimetry.
- (h) Laws of thermochemistry ; standard heat of formation ; relationship between chemical affinity and energy changes in reaction ; free energy.
- (i) Law of mass action and variation of equilibrium constant with temperature ; electrolyte equilibria ; titration of weak electrolytes ; hydrolysis of salts ; buffer solutions.
- (j) Elementary treatment of the kinetics of homogeneous chemical reactions ; homogeneous catalysis.
- (k) Conductivity of electrolytes and transport numbers ; electrolysis and polarisation ; E.M.F. of cells ; single electrode potentials ; liquid junction potentials ; relation between electrical and chemical energy ; pH measurement ; oxidation-reduction systems ; potentiometric titration.
- (l) Adsorption at interfaces ; heterogeneous catalysis ; adsorption chromatography. Preparation, purification and general properties of colloids. Colloidal electrolytes ; membranes and emulsions.

Organic

- (a) A general consideration of the mechanism of simple organic reactions. The methods of formation and preparation and the general chemical properties of aliphatic, aromatic and alicyclic compounds containing the chief functional groups illustrated by references to compounds used in pharmacy.
- (b) The chemistry of cyclic compounds illustrated by benzene, naphthalene, anthracene, phenanthrene, furan, thiophene, pyrrol, pyridine, quinoline, *iso*-quinoline and their reduction products.
- (c) The chemistry of the groups of naturally occurring compounds illustrated by examples of importance in pharmacy including simple glycosides, amino-acids, fixed oils, fats and waxes; uric acid, theobromine, theophylline, caffeine and adenine; terpenes ($C_{10}H_{16}$) and the more important constituents of essential oils and related products; the methods of extraction, preparation and purity and the general methods used for the elucidation of the structure of alkaloids.
- (d) The chemistry of the main groups of compounds restricted to the simpler examples which (a) exhibit physiological activity, and (b) combat invading organisms.
- (e) Stereoisomerism, tautomerism and resonance.

Practical

A general course illustrative of the theoretical section of this syllabus including :

1. The preparation of inorganic and organic compounds. Inorganic and organic qualitative analysis. The identification or reference to class of substances in the pure state or in admixture; the detection and identification of impurities.
2. The determination of physical constants used as criteria of purity including refractive index, specific rotation and viscosity. The determination of pH and the use of colorimeters and polarimeter. The quantitative analysis of inorganic and organic substances; the quantitative determination of the active constituents in drugs, pharmaceutical preparations, essential oils and other products which are amenable to chemical assay.

Pharmacognosy*General*

Materia medica and the development of Pharmacognosy as an independent scientific study.

The diagnostic characters of the chief taxonomic groups of plants and animals in relation to crude drugs, including the types of organisms responsible for the deterioration of crude drugs.

The general morphology and histology of plants and their application to the identification of plant members used as crude drugs.

Linear microscopical measurements.

Methods used for the examination of crude drugs, including the isolation and identification of tissues and cells.

Preparation of systematic descriptions of crude drugs.

Evaluation of crude drugs by the determination of foreign organic matter for whole and broken drugs and by the determination of ash and yields to solvents.

Drug constituents and their pharmaceutically significant general characters. The chemical tests for important groups of drug constituents.

Chemomicroscopical tests for tissues and cell contents.

The deterioration and storage of crude drugs, as illustrated by the drugs mentioned in the list below.

The principles underlying the practical work of the syllabus.

Special

A knowledge of the following as illustrative of the general part of this syllabus.

The biological and geographical sources, the cultivation, collection and preparation in so far as they affect the characters of the crude drug, the macroscopical and sensory characters, the more important commercial varieties, adulterants and substitutes, and the constituents of the following drugs :

Starches and Derivatives :—*Starches of Arrowroot, maize, potato, rice and wheat ; soluble starch, dextrins.*

Woods :—*Quassia.*

Barks :—*Cascara, cinchona, cinnamon, quillaia, wild cherry.*

Leaves and Bulbs :—*Coca, digitalis, senna, squill, witch-hazel.*

Flowers :—*Clove, chamomile, pyrethrum.*

Seeds :—*Colchicum, linseed, nutmeg, nux vomica, strophanthus.*

Fruits :—*Cardamom, capsicum, caraway, colocynth, coriander, dill, fennel, orange and lemon rind, rosehip, senna pod.*

Herbs and Entire Organisms :—*Belladonna, cantharis, chalk, coccus, ergot, henbane, Indian hemp, Irish moss, lobelia, penicillium, stramonium, yeast.*

Rhizomes and corms :—*Colchicum, ginger, Indian podophyllum, liquorice, male fern, podophyllum, rhubarb, valerian.*

Roots :—*Aconite, belladonna, calumba, derris, gentian, ipecacuanha, ipomoea, jalap, krameria, senega.*

Juices and Extracts :—*Agar, alginates, aloes, curare, gambier, gelatin, opium.*

Gums and Saccharine substances :—*Acacia, tragacanth, honey.*

Resins and Balsams :—*Benzoin, colophony, myrrh, Bals. of Peru, storax, Bals. of Tolu.*

Oils, Fats and Waxes :—*Beeswax, castor oil, clove oil, cod liver oil, lemon oil, olive oil, theobroma, wool fat, wool alcohols.*

Glands and Glandular Products :—*Pancreas, pituitary, thyroid.*

Surgical Dressings :—Their preparation and evaluation, including the sources, preparation, characters (including microscopical characters), qualitative chemical tests and constituents of the following fibres and filtering agents :

Asbestos, cellulose wadding, cotton, kieselguhr, flax, glass wool, jute, rayon, silk, talc, wood pulp and wool.

The microscopical characters and qualitative chemical tests of the drugs printed in italics in the above list.

Practical

A general course illustrative of the theoretical section of this syllabus, including :

The identification and description of the macroscopical characters and the detection of adulteration and deterioration in the drugs named in the list above.

The qualitative chemical tests, the microscopical preparations, including the isolation of tissues and cells, and the description of the microscopical characters of the drugs printed in italics in the list above.

The preparation of systematic descriptions of the gross morphology, the general microscopical characters of the tissues, including linear microscopical measurements and the general chemical reactions of crude drugs and their reference to their morphological groups.

The recognition of crude drugs commonly used in Pharmacy.

The identification and determination of the proportions of the ingredients in a mixture of crude drugs in the entire or broken condition.

The identification of powders of the drugs printed in italics in the list above, either when occurring singly or in admixture or adulterated.

The examination and identification of the surgical dressings and filtering materials named in the theoretical syllabus.

The determination of ash values, moisture contents, extractive values and foreign organic matter (by macroscopical methods) in crude drugs.

Pharmacology

An elementary study of Pharmacology introducing the general principles of the subject by reference to physiology and histology, and especially of the actions of drugs of pharmacological importance, and the tissue responses they invoke.

The importance of biological assay and the drugs which illustrate the principles involved.

Blood. Structure, composition, formation and destruction, respiratory functions and buffer mechanisms, blood grouping. Lymph, tissue fluid and cerebrospinal fluid. Coagulants and anticoagulants, Vitamins B₁₂, C., K., liver extract, preparations of iron.

Heart and Circulation. Anatomical structure of the heart and its circulatory system ; origin, transmission and control of the heart beat. Blood pressure and blood flow through the vascular system and their nervous and chemical control. Vasconstrictor and vasodilator drugs, cardiac glycosides, quinidine.

Respiration. The mechanics of respiration, gaseous interchange, control of pulmonary ventilation. Respiratory stimulants, oxygen, carbon dioxide and carbon monoxide.

Digestion. Mechanism and control of the secretion and composition of digestive juices. Digestion and absorption of foodstuffs. Movements of the alimentary tract. Antacids, carminatives, emetics, bitters and purgatives.

Metabolism. The metabolism of protein, fat and carbohydrate. Nitrogenous equilibrium. Insulin, adrenaline, thyroid.

Nutrition. Dietary requirements at different ages and under different conditions. Essential minerals and vitamins.

Temperature Control. The regulation of body temperature. The functions of the skin. Local anaesthetics and antipyretics.

Excretion. Structure and function of the kidney. Composition and formation of urine. Diuretics, antidiuretics and urinary disinfectants.

Endocrine Glands. Structure and function of the pituitary, thyroid, parathyroid, suprarenal and pancreas. The pharmacological actions of their hormones.

Reproduction. Structure and functions of the testis, ovary, uterus and placenta. Menstrual and oestrous cycles. Diagnosis of pregnancy. Oestrogens, progesterone, androgens and gonadotrophic hormones.

Muscle and Nerve. The comparative physiology of striated and unstriated muscle. Structure of nerve cells and fibres, the nerve impulse and its transmission. Autonomic drugs. Neuromuscular blocking drugs.

Nervous System. The functions and structure of the cerebrum, cerebellum and basal ganglia. Spinal cord and reflex arc. Conditional reflexes. The autonomic nervous system and the drugs that modify its action. Anaesthetics, narcotics, hypnotics and analgesics. Excitants of the central nervous system.

Special Senses. The structure and functions of the eye. Mydriatics, myotics, cycloplegics. Local anaesthetics.

The general principles of biological standardisation as applied to the assay of insulin, adrenaline, histamine, pituitary (post. lobe), digitalis and Vitamin D.

Practical

A general course illustrative of the theoretical section of this syllabus including :

Animal Experiments

Experiments on the frog muscle-nerve preparation which illustrate the physiological properties of muscle and nerve. Properties of cardiac muscle as shown by the frog heart, and perfused mammalian heart. Properties of smooth muscle as demonstrated by the isolated intestine and uterus. Suitable experiments to demonstrate the more important pharmacological actions of drugs on these structures and tissues.

Chemical Physiology

Qualitative tests which illustrate the properties of carbohydrates, lipids, and proteins in food and animal tissues. Separation and estimation of carbohydrates and proteins in foods and tissues. Experiments to illustrate the action and properties of enzymes and their modification by drugs. Qualitative and quantitative experiments on digestive juices. The examination of urine, the estimation of its main constituents, and the recognition of abnormal constituents.

Blood

Coagulation, spectroscopic examination, estimation of blood sugar and haemoglobin, red and white cell counts, blood grouping. The action of drugs on blood and its elements.

Histology

Recognition and description of microscopic preparations of the more important tissues.

PART II
Pharmaceutical Chemistry

General

A more detailed consideration of the subject matter of the Part I course.

- (a) Elementary treatment of emission and X-ray spectra ; outline of modern theories of atomic structure.
- (b) Theory of analytical techniques involving the use of physical instruments including pH measurement, polarography, absorptiometry and spectrophotometry, fluorimetry and colorimetry ; physical (e.g. optical and electronic) principles upon which the instruments employed in these techniques are based, insofar as such principles provide a realisation of the scopes and limitations of the instruments ; elementary statistical evaluation of results ; theoretical aspects of the relations between physical properties and molecular structure which facilitate the choice of an instrument to solve a particular research or analytical problem ; evaluation of molecular structure from spectrophotometric, potentiometric and polarographic studies.
- (c) Elementary treatment of chemical thermodynamics including the laws of thermodynamics, definitions of the thermodynamic properties of a system ; chemical potentials, conditions of equilibrium and direction of spontaneous change ; standard free energies of formation and the calculation of equilibrium constants.
- (d) Physical chemistry of solutions including the definitions of activities and activity coefficients and experimental methods for determining these quantities ; chemical equilibria in solutions ; interionic attraction theory ; complex ions ; overvoltage and separation of metals by electrolysis.
- (e) Chemical kinetics including a treatment of energy and entropy of activation ; mechanisms of catalysis ; complex reactions including chain mechanisms ; activation by light absorption, laws of photochemistry and photochemical sensitisation.
- (f) Adsorption and surface concentrations ; insoluble surface films and molecular orientation ; zeta potentials ; adsorption on solids. Physical methods of studying colloid systems including measurements of osmotic pressure, viscosity, diffusion, sedimentation and electrophoretic mobility.
- (g) Physical methods of determining molecular structure and interatomic dimensions, including X-ray and electron diffraction and dipole moment measurements.
- (h) Chromatographic analysis.

Organic

- (a) The chemistry of homocyclic and heterocyclic ring systems (aromatic and alicyclic) not covered in Part I, derivatives of which are used in pharmacy.
- (b) The chemistry of the more important natural products of pharmaceutical importance including proteins ; alkaloids ; sterols ; bile acids, cardiac glycosides ; sex hormones ; carotenes and vitamin A ; other vitamins ; antibiotics. An elementary treatment of the chemistry of chlorophyll, haematin and nucleic acid. An extension of the survey of the chemistry of the main groups of compounds (a) which exhibit physiological activity ; (b) which combat invading organisms ; and (c) which exhibit anaesthetic or analgesic activity.

- (c) An elementary consideration of enzymes, fermentation and *in vitro* biosynthesis.
- (d) A consideration of conjugated systems, polymerisation and polycondensation, strainless ring systems, free radicals.
- (e) An extension of the study of synthetic methods of importance in organic chemistry.

Practical

A more advanced treatment of qualitative and quantitative analysis of inorganic and organic substances in pure state, in admixture, in natural products and in compounded preparations, including the use of organic complexes.

Advanced pharmaceutical analysis including the use of the spectrophotometer, the fluorimeter and other physical instruments used in quantitative estimations. The determination of simple reaction velocities, titration curves, oxidation-reduction potentials and experiments illustrative of the physical chemistry of the syllabus. Organic preparations involving several stages.

Pharmacognosy

Origins

Materia Medica derived from folk-lore, Greek, Roman and Arabian medicine.

Travel and exploration.

Herbals and text-books of materia medica.

Future of crude drugs, including factors modifying the use of crude drugs in Pharmacy.

Commerce, Cultivation, Collection, etc.

A general knowledge of the effects of manures, hybridisation and plant breeding. The control of diseases, weeds and animal pests, with special reference to plants grown in Great Britain.

Drying, transport and storage.

Deterioration, its causes, agents and prevention.

Adulteration, methods used for and detection of.

Constituents and Evaluation

A more detailed treatment of groups of drug constituents, including the isolation and identification of important constituents. Evaluation by macroscopical and microscopical characters and by the assay of crude drugs, excluding biological assays. Types of standards.

Advanced Microscopy

Including drawing to scale, photomicrography, quantitative microscopy and other newer microscopical techniques applicable to the study of crude drugs.

Indigenous Medicinal and Poisonous Plants

A knowledge of the more important indigenous medicinal and poisonous plants and the use of a "Flora."

Practical

A general course illustrative of the theoretical section of this syllabus, including :

Systematic descriptions of crude drugs.

Microscopical preparations of medicinal plants ; drawings to scale and photographic records.

The isolation and identification of important drug constituents.

Quantitative microscopical constants for powdered drugs.

Qualitative and, where possible, quantitative analysis of mixtures of powdered drugs and pharmaceutical preparations containing powdered drugs.

The methods of evaluating crude drugs, including alkaloidal and other assays, excepting biological assays.

The examination and recognition of the more important indigenous medicinal and poisonous plants by the use of a Flora.

Pharmacology

A more detailed study of the general properties of pharmacologically active substances, chemotherapeutic agents, vitamins and hormones. Their mode and sites of action, routes of administration and therapeutic uses. The relation of pharmacological action to chemical structure. The general principles and methods of biological assays, including a short consideration of animal variation and the statistical methods involved.

Practical

A general course illustrative of the theoretical section of this syllabus, including :

1. The recognition of the effects of the more important drugs on animals and on isolated tissues including anaesthetics, analgesics, pressor and depressor substances, and drugs acting on the intestines and uterus, skin and eye.
2. Simple toxicity tests and the biological standardisation of Digitalis, Pituitary and Insulin.
3. Estimations of chemotherapeutic substances in blood and urine as instanced by sulphonamides and mepacrine.

Candidates at the practical examination in Pharmacology may consult their own practical note-books provided these contain no reference to Histology.

Pharmaceutics

1. A more detailed consideration of the theoretical section of the Part I syllabus in pharmaceutics, with particular reference to :—The physico-chemical principles involved in pharmaceutical operations ; disinfectants, antiseptics and preservatives ; the principles of sterilisation and asepsis.

2. Recent developments in pharmaceutics.

3. The application of statistical methods to problems in pharmaceutics.

4. The pharmaceutical problems involved in formulation and process development (excluding engineering problems), and packaging and packaging materials.

5. The principles underlying the preparation of medicaments by biochemical synthesis.

Practical

A general course illustrative of the theoretical section of this syllabus, including the formulation and compounding of pharmaceutical preparations, the assessment of pharmaceutical operations, the evaluation of disinfectants, antiseptics, preservatives and antibiotics, sterilisation processes and tests for sterility and methods of staining micro-organisms.

Pharmaceutical Engineering Science**A. Pharmaceutical Engineering Processes****I. Conveyance and Storage of Materials**

- (a) The laws governing the flow of gases and liquids and methods of measurement.
- (b) Plant and equipment for conveyance and storage of semi-fluids, liquids and gases.

II. Heat Transmission

Mechanism of heat transfer by conduction, radiation and convection. Condensation of vapours : Effect of non-condensable gases. Radiation from surfaces. Effect of nature of materials and boundary films of liquids and gases on heat transmission and their relation to fluid friction. Design of apparatus in which heat exchange takes place. Heat conservation and insulation. The problem of heat transfer in the process of freeze drying. Methods and applications of inductive heating.

III. Treatment of Materials

A good knowledge of the following :

- (a) The physical, physico-chemical and engineering principles governing the design, lay-out and operation of plants for processes employed in pharmaceutical industry with special reference to the following :

1. Size reduction.
2. Mixing.
3. Compression.
4. Separation *without* change of phase or physical state :
 - (a) Hydraulic separation.
 - (b) Air separation.
 - (c) Filtration.
 - (d) Centrifuging.
5. Separation *with* change of phase or physical state :
 - (a) Leaching and extraction.
 - (b) Evaporation.
 - (c) Distillation and Condensation.
 - (d) Drying.
 - (e) Crystallization.
 - (f) Absorption and Adsorption.

- (b) A knowledge of plant for some of the typical operations in the physical and reaction treatment of materials selected from 1 to 5 above.
- (c) Packaging and conveyance of manufactured materials.
- (d) The preparation of quantitative Flow Sheets of material, energy and time and their relation to plant design.

B. *Pharmaceutical Plant Construction*

A general knowledge of the following :

- I. The nature and properties of the important materials employed in the construction and erection of plant.
- II. The resistance of materials of construction to corrosion and to chemical and physical change.

C. *Safety Methods in Pharmaceutical Laboratories and Works*

An appreciation of mechanical, chemical and fire hazards. The problems of explosive hazards including inflammable gases and dusts.

INSTITUTIONS RECOGNIZED FOR THE PURPOSES OF THE B.PHARM. DEGREE

Bradford, Technical College.
Brighton, Technical College.
Leicester, College of Technology and Commerce.
London, Chelsea Polytechnic.
London, School of Pharmacy.
Portsmouth, Municipal College.
Sunderland, Technical College.

UNIVERSITY OF LONDON



REGULATIONS

FOR THE

Intermediate Examination

IN

SCIENCE

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a "Blue Slip" which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

These Regulations are applicable to External Students proceeding to the following Degrees :—

Bachelor of Science (General)

Bachelor of Science (Special—Old Regulations).

Bachelor of Science (Special—Revised Regulations).

Bachelor of Science (Engineering).

Bachelor of Science (Engineering) in Chemical Engineering.

Bachelor of Science (Engineering) in Mining.

Bachelor of Science (Engineering) in Metallurgy.

who have satisfied the minimum University and Faculty entrance requirements and have been registered as External Students for one of the above Degrees, but who do not already hold qualifications required for direct entry to the Degree course.

Students who are intending to enter a School, College or Institution of the University in order to proceed to a degree in Science or in Engineering as Internal Students should not proceed according to these Regulations unless they have been instructed to do so and have had their choice of subjects approved by the School, College or Institution which they propose to enter, and confirmed by the Academic Registrar of the University as correct.

INTERMEDIATE EXAMINATION IN SCIENCE

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination, each candidate must (a) have satisfied the minimum University and Faculty entrance requirements and (b) have been registered as an External Student preparing for the degree of B.Sc. or B.Sc.(Eng.).

Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced a course of study. Students for the July examination should normally apply for registration during the period October to December of the year preceding the examination, and not later than 10 February. Students for the November examination should normally apply for registration in the period January to March preceding the examination, and not later than 17 September. **Students who apply to take the Final Examination less than three academic years from the date of registration are warned that an application for late registration, with a late fee of £2 2s., will be necessary when they apply for approval of candidature for the final examination.**

FACULTY REQUIREMENTS

A candidate who has satisfied the minimum University entrance requirements by means of a General Certificate of Education on or after 1 May 1951 will be required to have passed in Mathematics at Ordinary or Advanced Level at the Certificate examination or an accepted equivalent.

DATE OF EXAMINATION

The examination shall commence on the first Monday after 28 June ; and (in London only) a further examination will be held, beginning on the fourth Monday in November.

The syllabuses for the November examination are the same as those for the preceding July.

ENTRY TO EXAMINATION

For the examination held in July, the candidate list will be opened on 27 January. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 3 March, and the candidate list will be closed on 10 March. No entry can be accepted after the candidate list has been closed.

For the examination held in November, the candidate list will be opened on 5 September. Entry forms will not be despatched from the University after 10 October, and the candidate list will be closed on 17 October. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole examination (three or four subjects)	6	6
Single subjects (except as specified below), each ..	2	2
<i>Exemption in virtue of another examination :—</i>		
Complete exemption	no fee	
Partial exemption, each remaining subject taken ..	2	2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank, Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 June in the case of the July examination, or 1 November in the case of the November examination, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

1. Candidates may enter in three or in four subjects chosen from the following list :—

	Written Papers		Practical Examination
Pure Mathematics	Two	3-hour	—
Applied Mathematics	Two	3-hour	—
Mathematics (Pure and Applied)	Three	3-hour	—
Physics	Two	3-hour	One 3-hour
Chemistry	Two	3-hour	One 3-hour
Biology	Two	3-hour	Two 3-hour
Botany	Two	3-hour	One 3-hour
Geography	Three	3-hour	—
Geology	Two	3-hour	One 3-hour
General Physiology	Two	3-hour	One 3-hour
Zoology	Two	3-hour	One 3-hour

2. Candidates are required to choose their subjects according to the Degree to which they propose to proceed as follows :—

<i>Degree</i>	<i>Intermediate Subjects</i>
B.Sc. (General)	Three subjects of which at least one must be selected from the first five.
B.Sc. (Special—Old Regulations)	
B.Sc. (Special—Revised Regulations) :—	
Botany	Any three subjects.
Chemistry	1. Pure Mathematics or Mathematics (Pure and Applied).
	2. Physics.
	3. Chemistry.
Geography	Any three subjects.
Geology	Any three subjects.
Mathematics	1. Pure Mathematics.
	2. Applied Mathematics.
	3. Any other subject.
Physics	As for B.Sc.(Eng.).
Psychology	Any three subjects.
Statistics	Pure Mathematics or Mathematics (Pure and Applied) and two other subjects.
B.Sc.(Engineering)	<i>Either :—</i> <i>or :—</i>
B.Sc. (Engineering—in Chemical Engineering or Mining or Metallurgy)	
	1. Pure Mathematics.
	2. Applied Mathematics.
	3. Physics.
	4. Chemistry.
	1. Mathematics (Pure and Applied).
	2. Physics.
	3. Chemistry.

3. Mathematics (Pure and Applied) may not be taken with Pure Mathematics nor with Applied Mathematics. Biology may not be taken with Botany or Zoology.

4. A candidate who enters for examination in General Physiology is required to enter for examination in Chemistry, unless he has been exempted from examination in this subject.

5. Biology is not regarded as an appropriate subject for a candidate who proposes to proceed to the degree of B.Sc. (Special) in Botany or Zoology. Such a candidate should enter for examination in Botany or Zoology according to the degree to which he is proceeding or should take both Botany and Zoology at the Intermediate Examination, or obtain an equivalent qualification.

6. Candidates who enter for examination in three subjects are required to pass in all subjects. There is no reference at the Intermediate Examination in Science for candidates offering three subjects, and failure in one or more subjects entails failure in the whole examination.

7. Candidates who enter for examination in four subjects but who satisfy the examiners in any three will be deemed to have passed the Intermediate Examination in Science and will be credited with the subjects which they have passed. They will not be permitted to re-enter for the examination except under the regulations for supplementary subjects.

8. A candidate who has passed the Intermediate Examination in Science but who has not obtained passes in the correct combination of subjects required for the degree to which he proposes to proceed will be required to pass in the remaining subject or subjects at a subsequent examination.

9. The examiners shall be at liberty to test any candidate by means of oral questions.

10. No candidate offering an Experimental Science subject will be allowed to pass unless he satisfies the examiners in the practical part as well as the written part of the examination in that subject. Candidates must bring to the practical examination their *original* practical note-books containing a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory, for inspection by the examiners. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

11. All answers to examination questions shall be written in English unless instructions are given to the contrary.

12. A candidate who has passed the Intermediate Examination in Science will not be permitted to re-enter, except as provided for under the Regulations for Supplementary Subjects.

SUPPLEMENTARY SUBJECTS

Candidates who have passed or obtained exemption from the Intermediate Examination in Science may enter for examination in one or more supplementary subjects.

COMPLETE EXEMPTION

Complete exemption from the Intermediate Examination in Science will be granted as follows :—

In virtue of a Higher School Certificate or a General Certificate of Education :—

1. A candidate who holds (i) a Certificate awarded on a Higher School Examination recognized by the Ministry of Education as an approved second examination in Secondary Schools or (ii) a General Certificate of Education and (iii) has satisfied the minimum University and Faculty entrance requirements, may obtain complete exemption from that examination if he has passed on one and the same occasion in three subjects at (i) Main Subject standard *or* (ii) Advanced Level, provided that the subjects correspond to paragraphs 1, 2, 3, and 4 of the Scheme of Examination.

2. Candidates who have not qualified in the correct combination of subjects will be considered under the scheme for Partial Exemption below.

3. From 1 September 1952, all fees payable in respect of complete or partial exemption are abolished. Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination in Science will be set off against the entry fee at the time of entry for the Final examination taken between 1 September 1952 and 1 September 1956.

4. No Certificate will be issued to candidates in respect of such exemption, but a notification will be sent to duly qualified candidates at their request when the exemption has been completed, stating that they are qualified to proceed to the External B.Sc. Examination or complying with the Regulations in all respects.

In virtue of the Engineering Cadetship Diploma :—

5. Engineering Cadets who have been awarded the Ministry of Education *Diploma* and who have satisfied minimum University entrance requirements may apply for permission to proceed to a degree in the *Faculty of Engineering* as External Students without having passed the Intermediate Examination in Science or Engineering. Applications must be submitted on the prescribed form, obtainable from the External Registrar. Holders of the Cadetship Diploma who

are exempt from the Intermediate Examination will be required to complete the course of study for the degree at a recognized institution and to comply with the regulations in all other respects. Candidates proceeding in the Faculty of Science are not eligible for this exemption. The dates and conditions concerning payment of the exemption fee in para. 3 above are also applicable in this case.

6. Engineering Cadets proceeding to the B.Sc. (Eng.) Degree in Chemical Engineering will be required to pass in Chemistry at Intermediate Science and may enter before or at the same time as they enter for Section I of Part I of the Final Examination.

In virtue of other examinations of this University :—

1. Candidates who have passed one or more of the following examinations of this University with the subjects specified will be credited with the corresponding subject(s) at the Intermediate Examination in Science :—

Intermediate Examination in Arts	{	Biology ; Botany ; Chemistry ; Geography ; Geology ; Pure Mathematics ; Applied Mathematics ; Mathematics (Pure and Applied) ; Physics ; Zoology. Geography.
B.A. (General or Honours) Examination		
Diploma in Geography	{	Biology ; Botany ; Chemistry ; Physics ; General Physiology ; Zoology ; Pure Mathematics. Biology.
Intermediate Examination in Pharmacy		
Diploma in Biology	{	Botany ; Chemistry ; Geology ; Pure Mathematics ; Applied Mathematics ; Physics ; Zoology. Botany ; Chemistry ; Geology.
Intermediate Examination in Agriculture		
Intermediate Examination in Horticulture	{	Physics.
Intermediate Examination in Household and Social Science		
Intermediate Examination in Engineering (including candidates who have been referred in Engineering Drawing)	{	Pure Mathematics ; Applied Mathematics ; Physics (provided that Sound and Optics was passed as the Optional Subject).

2. Candidates who have passed one of the above-mentioned examinations with three of the subjects specified will be granted complete exemption from the Intermediate Examination in Science and, provided that the subjects in which they have passed correspond to those required in paragraph 2 of the Scheme of Examination, they may apply for approval of candidature for the Final Examination to which they propose to proceed.

3. Candidates who have passed one or more of the above-mentioned examinations with less than three of the subjects specified may apply for exemption in virtue of those subjects under the scheme for Partial Exemption set out below.

4. Candidates who have passed the Second Examination for Medical Degrees of this University will be permitted, after an interval of not less than one year, to enter for the B.Sc. Special Degree in Chemistry, (old Regulations) Physiology or Anatomy (in 1954 only), without having to pass the Intermediate Examination in Science.

5. A candidate who entered in four subjects under the Regulations in force prior to 1949, and who failed or was referred in one subject, will be permitted to proceed to the B.Sc. or B.Sc.(Eng.) Degree provided that his remaining three subjects comply with the requirements of para. 2 of the Section headed "Scheme of Examination".

PARTIAL EXEMPTION

1. A candidate who is qualified to proceed to the Intermediate Examination in Science and who holds a qualification or qualifications which entitle him to exemption in one or more subjects of that examination but which do not satisfy fully the qualifications required for admission to the Degree course to which he is proceeding, may complete his qualification by passing in the required subject or subjects at the Intermediate Examination in Science under the conditions set out in paragraphs 2 and 3 below.

2. (a) Candidates proceeding to the B.Sc. (Special) Degree under the Revised Regulations.

(b) Candidates proceeding to a Degree in the Faculty of Engineering.

(c) Candidates who are already Graduates of the University of London.

(d) Candidates proceeding under the Regulations for Advanced Students.

by passing in the remaining subject or subjects necessary to comply with the requirements set out in paragraph 2 of the Scheme of Examination. A candidate who enters for examination in two subjects is required to pass in both on the same occasion.

(Note.—A candidate may also complete his qualification by passing in the corresponding subject or subjects at the General Certificate of Education (Advanced Level) Examination. A candidate who elects to complete his qualification by this method and who is required to pass in two or more subjects is not required to pass in all subjects on the same occasion.)

3. (a) Candidates proceeding to the B.Sc. (General) Degree.

(b) Candidates proceeding to the B.Sc. (Special) Degree under the Old Regulations.

by passing in the remaining subject or subjects necessary to comply with the requirements set out in paragraph 2 of the Scheme of Examination but with the requirement that the total of Intermediate Science subjects must be made up to a minimum of *four*. A candidate who enters for examination in two subjects is required to pass in both on the same occasion.

(Note.—A candidate may also complete his qualification by passing in the corresponding subject or subjects at the General Certificate of Education (Advanced Level) Examination. A candidate who elects to complete his qualification by this method and who is required to pass in two or more subjects must pass in all subjects on the same occasion.)

4. From 1 September 1952 all fees payable in respect of partial exemption are abolished. Candidates who are required to take part of the examination to complete a partial exemption will be required to pay entry fees for the subject or subjects which they are required to take, but no additional fee for exemption from the remaining part of the examination.

5. A candidate who is partially exempted from the Intermediate Examination in Science will not be issued with a certificate of exemption, but, on completion of the required Intermediate qualification a notification will be sent, on request, stating that the candidate is qualified to proceed to the appropriate B.Sc. Degree Examination for External Students on complying with the Regulations in all respects.

6. Candidates who have not qualified for the award of a Higher School Certificate but who have been permitted to count successes gained in 1949 and 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirement, may apply for exemption in corresponding subjects of the Intermediate Science Examination in respect of these two subjects in accordance with the conditions set out above.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate, as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 20 August (for the July examination) and on 7 January (for the November examination) the External Registrar shall publish a list of candidates who have passed, arranged in alphabetical order.

2. A copy of this Pass List will be sent to each successful candidate and an individual notification will be sent to each unsuccessful candidate.

3. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October for the July examination, and in January for the November examination.

4. Certificates of having passed the examination will not be issued except to qualified students applying for such certificates.

5. Each successful candidate will receive a Detailed Report on his results in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass ; D—Failure ; E—Bad Failure.

6. Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—

D—Failure ; E—Bad Failure.

7. Failure in a subject which includes a practical or oral examination indicates failure in the subject as a whole and no further information can be given regarding the candidate's performance in the various parts of the examination.

8. Detailed Result Reports will be sent to successful candidates from one to two months after the publication of the ordinary Pass List, but will be sent to unsuccessful candidates at the time when they are notified of the result of the examination.

9. Educational institutions in receipt of annual grants from public funds may apply for a statement of the detailed results of their candidates ; such applications must be accompanied by a list of the candidates' names, the name of the examination and the date at which it was taken. The results cannot be communicated until about two months after the publication of the Pass List and each institution will have communicated to it the results of those candidates only who are registered as pursuing a course of study at that institution.

SYLLABUSES

Pure Mathematics

[Two papers.]

The theory of quadratic equations. The convergence of the geometric series. Permutations and combinations, including simple applications to probability. The binomial theorem for positive integral indices. The theory of indices. The nature and use of logarithms.

The geometry of similar rectilinear figures. Mensuration of plane rectilinear figures. The angles made by planes and straight lines with one another. Mensuration of simple solid figures, including the tetrahedron, cylinder, cone and sphere (the methods of the calculus may be

used where suitable). Rectangular cartesian co-ordinates applied to the straight line, circle, parabola, ellipse, and hyperbola.

Plane trigonometry, up to and including the solution of triangles. Trigonometric, exponential, and logarithmic functions, and their graphs.

The definition of a derivative. Differentiation of x^n (n an integer, positive or negative), $\sin x$, $\cos x$, $\tan x$, e^x , and $\log x$. Differentiations of a sum, a product, a quotient, and in simple cases of a function of a function. Definite and indefinite integration of the above functions and of simple functions of them. Areas and volumes. Representation of equations by curves, with easy applications. Simple examples on maxima and minima.

Applied Mathematics

[Two papers.]

Equilibrium of one or more bodies under the action of uniplanar forces, or of parallel forces. Smoothly jointed frameworks, including graphical solutions. Properties of mass centres, and their determination in simple cases. Determination of second moments of solid figures. The laws of friction.

Relative velocity and acceleration, their resolution and composition. Graphical representation of relations between displacement, velocity, acceleration and time. Mass, momentum, force, impulse, work, energy and power. Simple cases of direct and oblique impact. Motion under the action of a constant force. Rectilinear motion of two connected particles. Simple problems on the motion of projectiles. Uniform circular motion. The conical pendulum. Simple harmonic motion. Motion in a vertical circle under gravity. Motion of a rigid body about a fixed axis. Dimensions. Change of units.

Pressure of a fluid at a point. Magnitude and direction of resultant thrust of liquids on plane and spherical surfaces. Centres of pressure in simple cases. Resultant force of buoyancy on bodies partially or wholly immersed.

Elementary ideas of statistics. Frequency diagram. Calculation of the mean. Standard deviation. Standard deviation of the mean.

Mathematics (Pure and Applied)

[Three papers.]

The theory of quadratic equations. The convergence of the geometric series. The binomial theorem for positive integral indices. The theory of indices. The nature and use of logarithms.

The geometry of similar rectilinear figures. Mensuration of plane rectilinear figures. The angles made by planes and straight lines with one another. Mensuration of simple solid figures, including the tetrahedron, cylinder, cone and sphere (the methods of the calculus may be used where suitable). Rectangular cartesian co-ordinates applied to easy exercises on straight line, the circle and the parabola.

Plane trigonometry up to and including the solution of triangles. Trigonometric, exponential and logarithmic functions, and their graphs.

The definition of a derivative.

Differentiation of x^n (n an integer, positive or negative), $\sin x$, $\cos x$, $\tan x$, e^x , and $\log x$. Differentiation of a sum, a product, a quotient, and in simple cases of a function of a function. Definite and indefinite integration of the above functions and simple functions of them. Areas and volumes. Representation of equations by curves, with easy applications. Simple examples on maxima and minima.

Equilibrium of one or more bodies under the action of uniplanar forces, or of parallel forces. Smoothly jointed frameworks, including graphical solutions. Properties of mass centres, and their determination

in simple cases. Determination of second moments of simple figures. The laws of friction.

Relative velocity and acceleration, their resolution and composition. Graphical representation of relations between displacement, velocity, acceleration, and time. Mass, momentum, force, impulse, work, energy and power. Simple cases of direct and oblique impact. Motion under the action of a constant force. Rectilinear motion of two connected particles. Simple problems on the motion of projectiles. Uniform circular motion. The conical pendulum. Simple harmonic motion. Motion in a vertical circle under gravity. Motion of a rigid body about a fixed axis. Dimensions. Change of units.

Physics

[Two papers and a practical examination.]

Candidates will be expected to show an acquaintance with the fundamental principles of mechanics up to the standard of the Ordinary level of the General Certificate of Education of the University of London, and to have acquired a general knowledge of the apparatus by which the elementary principles of Physics are illustrated and applied.

General Properties of Solids, Liquids, and Gases

Relation between volume and pressure in gases. Friction and viscosity. Surface tension. Diffusion. Osmosis. Stretching of wires.

Heat

Temperature. Instruments for the measurement of temperature. Expansion of solids, liquids, and gases with rise of temperature, isothermal and adiabatic expansion. Quantity of heat. Specific heat. Change of state. Latent heat. Vapour pressure. Boiling point. Dew-point. Formation of cloud, fog, and dew. Conduction. Definition of thermal conductivity. Convection. Radiation. Newton's Law of Cooling. The mechanical equivalent of heat and modes of determination. The conservation of energy.

Sound

The production and propagation of sound. Nature of wave-motion. Amplitude. Wave-length. Frequency. Experimental determination of the velocity of sound in air. Effect of change of temperature on the velocity. Reflexion. Determination of frequency by simple methods. Experimental investigation of the modes of vibration of strings by means of the sonometer. Experimental investigation of the vibrations of air in pipes by resonance to tuning forks. Organ pipes. Position of nodes and antinodes.

Light

Propagation of light. Laws of reflexion and defraction. Photometry. Reflexion at plane and spherical surfaces and the formation of images. Refraction at plane surfaces and by prisms. Minimum deviation. Chromatic dispersion. The general laws of radiation : visible, ultra-violet, infra-red. Emission and absorption. Heating effects of radiation. Phosphorescence and fluorescence. The formation of images by single lenses. Long and short light and their correction by lenses. The combination of two lenses to form a simple telescope or microscope. Measurement of velocity of light. Simple properties of polarized light.

Magnetism and Electricity

Properties of magnets. Simple phenomena of magnetization. The magnetic field : lines of force. The law of magnetic force. Magnetic moment. Intensity of magnetization. The earth as a magnet. The magnetic properties of iron and the elementary laws of the magnetic circuit. The simpler phenomena of electrified bodies. Conduction and insulation. Electrification by friction and by induction (influence).

Distribution of electrification on conductors. Electric field : strength of field. The law of electric force. Potential. Capacity. Energy of charge. Electroscopes and electrometers. Electric current. Magnetic field of current. Magnetic measurement of current. Galvanometers. Work done by an electric current. Electromotive force. Difference of potential. Resistance. Ohm's Law. Wheatstone's Bridge. Potentiometer. Resistance of cells. Volt. Ohm. Ampere. Ammeters. Voltmeters. Heating effects of currents. Elementary phenomena of electrolysis : Faraday's Law. Voltmeters. Primary and secondary batteries. Action on current circuits in a magnetic field. Electromagnetic induction : Faraday's Law ; Lenz's Law ; induction coil. A thermoelectric couple. Simple phenomena of discharge in gases.

Practical Examination

[The following scheme is not exhaustive, and is intended merely to show the general nature of the exercises at the practical examination. The examiners are not precluded from setting other exercises and practical problems illustrative of the principles set forth in the syllabus.]

Measurement of length, mass, and time, involving eye-estimation of tenths of a division, use of vernier, use of the balance (weighing to one centigram), use of a seconds-hand watch. Determination of volumes. Specific gravities of solids, powders, and liquids. Use of the hydrometer. Verification of Boyle's Law. Determination of the centre of gravity of a plate. Determination of g by simple pendulum. Determination of velocity of sound in a tube by resonance with a fork. Use of the sonometer. Use of thermometers and determination of fixed points. Simple methods of determining specific heat and latent heat of fusion and of evaporation. Determination of dew-point. Use of simple photometers. Focal lengths of mirrors. Focal lengths of lenses. Arrangement of two lenses to make simple forms of telescope, microscope, and projection lantern. Simple use of spectrometer. Tracing the path of a ray of light through a block of glass and deduction of refractive index. Refractive index by method of apparent thickness. Tracing the lines of force in the neighbourhood of a magnet. Comparison of magnetic moments and fields. Measurement of resistance of wires and cells. Comparison of electromotive forces with potentiometer. Measurement of electro-chemical equivalent.

Candidates must bring to the practical examination their *original* practical note-books which must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory, for inspection by the examiners. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work. These note-books must be taken away by the candidates at the close of the examination.

Chemistry

[Two papers and a practical examination.]

The following outline is not to be regarded as a rigid syllabus, but is given in continuation of the syllabus of the Ordinary level of the General Certificate of Education, for the general guidance of candidates, to indicate the range of the written part (I) and the experimental part (II) of the examination in Chemistry.

The whole syllabus is to be treated in an elementary manner and as far as possible experimentally. More importance will be attached to a sound understanding of fundamental principles and standard experimental methods than to an acquaintance with advanced theoretical ideas.

I

The laws of chemical combination. History of the discovery of the

composition of air and water. The atomic and molecular theories. Equivalent, atomic, and molecular weights and methods for determining them. Valency. Atomic structure in so far as it is necessary to explain simply (a) the different types of valency, and (b) the periodicity in the properties of the elements of atomic number 1 to 18.

The periodic classification of elements, as illustrated by the chemistry of : H, He, Ne, A, Li, Na, K, Cu, Ag, Be, Mg, Ca, Sr, Ba, Zn, Cd, Hg, B, Al, C, Si, Sn, Pb, N, P, As, Sb, Bi, O, S, Cr, F, Cl, Br, I, Mn, Fe, Co, Ni. The treatment of the descriptive chemistry should be extended to include the preparation and properties of the more important compounds of : H, B, C, N, P, As, O, S, Cl, Br, I, Na, K, Cu, Ag, Mg, Ca, Ba, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe.

[“ Important compounds ” here means (a) compounds in common laboratory use for work up to Intermediate standard, or (b) compounds which have well-known uses.]

Source and common processes for the manufacture or production of : H, He, Ne, A, O, N, Cl, Br, I, C, P, S ; Na, Cu, Ag, Mg, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe, Ni. (A knowledge of metallurgical and other manufacturing operations will not be required except in broad outline.) Common processes for the manufacture of the following materials : Na_2CO_3 , NaHCO_3 , NaOH , CaO , SO_2 , H_2SO_4 , NH_3 , HNO_3 , HCl , hypochlorites, chlorates, bleaching powder, CO_2 , and the fuel gases.

The chemistry involved in inorganic qualitative and volumetric analysis (*see* Part II).

The chemistry involved in the detection of C, H, N, Cl, Br, I, and S in organic compounds. Calculation of empirical and molecular formulae from experimental data.

Elementary principles of Organic Chemistry including the following :—The quadrivalence of carbon and its power of forming stable bonds with non-metals and especially with itself. Relationship of structural formulae (excluding, except as mentioned below, the stereochemical aspect) of saturated open-chain hydrocarbons containing not more than 4 carbon atoms. Homology, Isomerism. Candidates should be able to give examples of structural isomerism, and should know why plane formulae are not universally acceptable, but they are not expected to be familiar with the formulae or behaviour of specific mirror-image or geometrical isomerides.

Typical properties conferred by substituents, emphasis being laid on the behaviour of groups rather than on the technique of preparation or recognition of individual substances. Nevertheless certain simple substances (mentioned below in parentheses) should be included among those selected as types ; candidates will be expected to be familiar with the usual origin or method of preparation and characteristics of these compounds. Substitution in saturated open-chain hydrocarbons (methane) by chlorine. The radicals $\text{C}_n\text{H}_{2n+1}$. Reactions of compounds $\text{C}_n\text{H}_{2n+1}\text{Cl}$ (Br or I) with alkali and ammonia. Alcohols of the general formula $\text{R}\cdot\text{CH}_2\cdot\text{OH}$ (methyl and ethyl alcohols), $\text{R}_2\text{CH}\cdot\text{OH}$, $\text{R}_3\text{C}\cdot\text{OH}$, and their behaviour towards sodium, phosphorus halides (or phosphorus together with halogens), hydrogen halides, oxidising agents, and dehydrating agents, including sulphuric acid. Formation of ethers (diethyl ether). Unsaturated hydrocarbons, C_nH_{2n} (ethylene). Addition of H_2 , Cl_2 , Br_2 , and HBr to olefins. Action of alkali on the products formed from olefins by addition of Cl_2 or Br_2 (acetylene). The carbonyl group in aldehydes, $\text{R}\cdot\text{CHO}$, and ketones, R_2CO (formaldehyde, acetaldehyde, acetone). The action of reducing and oxidizing agents on these substances, and the addition of HCN to them. Monobasic carboxylic acids, $\text{R}\cdot\text{CO}_2\text{H}$ (formic and acetic acid). Reaction of acids

with PCl_5 (acetyl chloride) and the behaviour of acid chlorides with water, alcohol, and ammonia. Esterification of acids (ethyl acetate) and the behaviour of esters towards acids, alkalis, and ammonia. Acid anhydrides (acetic anhydride), amides (acetamide) and their hydrolysis. Amines, RNH_2 , R_2NH , and R_3N (methylamine, dimethylamine, trimethylamine).

Modifications of group function as illustrated by the following : Difference in the properties dependent on the group OH in alcohols and in acids. Differences exhibited by the group $\text{C}=\text{O}$ in aldehydes and ketones on the one hand, and in acids, esters, etc., on the other. Differences in the properties of the NH_2 group in amines and amides.

The elementary principles of Physical Chemistry, which will find illustration throughout the subject matter of the syllabus. The following topics should be included among those studied :—The properties of gases : The laws of Boyle, Charles, Avogadro, Gay-Lussac, and Graham, and the law of partial pressures. Difference of specific heats of gases at constant pressure and at constant volume. Ratio of the specific heats and its connection with atomicity treated empirically. Determination of molecular weights of gases and vapours. Thermal dissociation. The properties of solutions : Distribution law. Henry's law. Osmotic pressure. Proportionality of lowering of vapour pressure, raising of boiling point, and lowering of freezing point to molar concentration. Determination of molecular weights in solution. The essential differences between colloidal and true solutions. Electrolysis and electrolytic dissociation. Chemical equilibrium and simple applications of the law of mass action. Le Chatelier's principle. Solubility product. Simple treatment of the strength of acids and bases, indicators, and the hydrolysis of salts. Effect of concentration, temperature, and catalysts on rate of reaction. Exothermic and endothermic reactions. Hess's law.

II

Practical Examination

Qualitative analysis of simple mixtures of not more than four inorganic radicals. (Phosphate separations will not be required.)

Preparation and use of volumetric solutions of :—acids and alkalis, potassium permanganate, potassium dichromate, sodium thiosulphate, iodine, arsenious oxide, silver nitrate, and potassium thiocyanate.

Candidates may also be required to examine the action of heat and reagents on substances supplied and to identify well-known products including gases, produced in the reactions. The practical exercises may also include the preparation and purification of substances by methods involving solution, precipitation, crystallization, distillation, and sublimation.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge ; centrifuge tubes ; water bath with cover pierced to take centrifuge tubes ; two long dropping pipettes ; micro burners ; wash bottles 100 cc. polythene squeezing type ; crucibles 25 mm. and 15 mm. ; spotting tiles (porcelain) and microscope slides ; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in. and block to hold these and centrifuge tubes ; rack for dropping pipettes ; long thin spatula ; Whatman papers (No. 120), 2 in. squares ; small porcelain dish ; forceps and tube holders ; anti-bumping tubes to fit in centrifuge tubes ; small conical flask 10 ml. ; pyrex tube fitted

for testing evolved gases ; reagents : strong acids in Jena T.K. bottles, other common reagents in bottles fitted with dropping pipettes.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners, and they may use their laboratory note-books and also any other book or books they wish during the practical examination. All books and note-books must be taken away by the candidates at the end of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Biology

[Two papers and two practical examinations.]

This syllabus is not regarded as adequate for preparing a candidate to take a B.Sc. (Special) degree in Botany or Zoology.

1. The general structure, physiology and life-history of :—*Amoeba*, *Paramecium*, *Hydra*, earthworm, cockroach, dogfish, frog, and rabbit ; *Chlamydomonas*, *Pleurococcus*, *Spirogyra*, *Fucus*, *Dryopteris* and of the flowering plant, as illustrating various grades in animal and plant organization. The salient distinctions between sedentary and motile organisms.

2. The nature of protoplasm. The structure and physiology of the cell ; cell-division ; gamete-formation and its relation to the mechanism of heredity. Cell-differentiation and tissue-formation, including an elementary knowledge of the histology and functions of :—epithelia, blood, connective, skeletal, muscular and nervous tissues of animals and of the epidermis, parenchyma, collenchyma, sclerenchyma, xylem, phloem, and the primary and secondary meristems (including cork formation) in plants. The structure and functions of the more important organs of a flowering plant and of the mammalian body.

3. Sexual and non-sexual reproduction ; parthenogenesis.

4. The embryology of the flowering plant. The elements of vertebrate embryology with special reference to (a) cleavage and origin of germ layers in *Amphioxus*, the frog, the fowl and the rabbit ; (b) the formation of the embryonic membranes in the fowl and the rabbit ; (c) the outlines of organogeny as illustrated by the study of the fowl as far as the end of the third day of incubation ; (d) the modes of nutrition during development.

5. An elementary knowledge of carbohydrates, fats and proteins and their recognition by simple chemical tests.

6. Nutrition in plants and animals. Photosynthesis. The commonly cultivated food plants and their nutritional significance. An elementary knowledge of the soil as it affects plant life, and the importance of nitrates, sulphates and phosphates to the plant.

7. Digestion, absorption and assimilation in animals. An elementary knowledge of vitamins. The nature of enzyme action and the transport and storage of food material in animals and plants.

8. Respiration and the energy changes involved. Excretion. The water relations of plants and animals. Growth. Stimulus and response in plants and animals. An elementary knowledge of the endocrine system in animals.

9. The parasitic and saprophytic modes of life as exemplified by *Pythium*, *Mucor*, the yeast plant, the bacteria and *Cuscuta* ; *Monocystis*,

the malarial parasite, the tape-worm and a nematode parasite of plants. (A knowledge of the structure and life-history of these organisms only so far as it is of importance in relation to the special mode of life.) Insects as pests (e.g., Cabbage white butterfly), as pollinators (e.g., Bee) and as vectors of disease (e.g., *Anopheles*, *Aphis*).

10. The principal facts of heredity, including a knowledge of simple Mendelian experiments, the evidence of evolution, and an outline of the principal theories of the mode in which it takes place.

Practical Work

The practical work will be based on the above syllabus and should include :—

1. Dissection of microscopical examination of the animal and plant types cited.
2. In addition to the general external and internal anatomical features of the earthworm, cockroach, dogfish, frog and rabbit, the candidate is expected to have made the following special dissections.

Cockroach (a) Preparation of salivary glands and of mouth parts.

Dogfish (b) Heart, afferent and efferent branchial systems.

(c) Brain and cranial nerves.

Frog (d) Heart and principal vessels of the arterial and venous systems.

(e) Spinal and sympathetic nerves ; removal of brain and spinal cord.

(f) Urinogenital system.

Rabbit (g) Heart and principal vessels of arterial and venous systems. (The heart of a sheep should be examined.)

(h) Removal and gross anatomy of brain.

(i) Urinogenital system.

(j) The eye of an ox.

3. In the study of the mammalian skeleton the skull of the dog will be substituted for that of the rabbit.

4. Microscopical preparation and examination of suitable animal and plant tissues.

5. Simple experiments in plant physiology, and detection of food stores by simple chemical tests.

6. A study of the external changes during development of the frog from fertilization to the end of metamorphosis. The examination of whole mounts and representative sections illustrating the development of the frog to the beginning of germ-layer formation and of the chick during the first, second and third days. The external features of a fairly advanced mammalian embryo attached to the wall of the uterus by the umbilical cord (museum specimen).

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidate at the close of the examination. Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Botany

[Two papers and a practical examination.]

Morphology

The structure and properties of the cell. The plant body : its structure, development and modifications. Nuclear and cell division.

Special Morphology, Reproduction and Taxonomy

The general characters of the following groups :—

Bacteria.

Fungi, especially *Mucor*, *Penicillium*, *Saccharomyces*, any common gill-bearing fungus, and a plant pathogen.

Algae, especially *Chlamydomonas*, *Spirogyra*, *Vaucheria* and *Fucus*.

Bryophyta, especially *Pellia*, and *Funaria*, the latter with special reference to its life history, and without detailed treatment of the sporophyte.

Pteridophyta, especially *Dryopteris*, and the special features of *Selaginella*.

Gymnosperms, especially *Pinus*.

Angiosperms, a study of the morphology and biology of the flower, with some training in the use of a flora. Family characters not to be emphasized.

Elements of Physiology

The mineral nutrition and water relations of plants.

Outlines of metabolic changes in the plant, especially respiration and photosynthesis.

Growth.

Geotropism and phototropism.

An elementary knowledge of the soil in relation to the plant.

Elements of genetics and their cytological basis. Evolution.

Practical Examination

The practical work will include the dissection and examination of plants or parts of plants, and the reference to the systematic position of the plants or parts of plants comprised in the above syllabuses. Simple experiments in practical physiology may be set.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination. Candidates may bring their own stains to the practical examination, but double staining is not desired. Candidates will be permitted to provide for themselves and use hand microtomes if they desire.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Geography

[Two papers and an examination in map work. No candidate will be allowed to pass unless he satisfies the examiners in map work as well as in the written part of the examination.]

1. General Geography (One paper).—General principles as exemplified in the world considered as a whole.

The Earth's Crust :—Nature of the earth's crust. The internal and external forces modifying the crust in so far as they determine :—(a) general structure and leading relief features of the continental masses and ocean basins ; (b) types and distributions of rocks, minerals and soils.

Climate :—Broad seasonal distribution of insolation, temperature pressure, winds and rainfall, leading to a recognition of chief climate types and their associated weather conditions. (The physical conditions and movements of the oceans should be considered only in so far as they affect climate.)

Vegetation :—General distribution of forest, woodland, scrub and grassland in relation to climate, soil and relief.

Major Geographical Regions :—The division of the world into major geographical regions.

Human Geography :—The influence of the foregoing physical factors upon the distribution of man and upon the production of food and raw materials, and the consequent development of the geographical regions.

2. Regional Geography (One paper)

(a) Europe with special reference to the British Isles, France, Germany, Italy, Switzerland and Scandinavia.

(b) North America with special reference to the north-eastern industrial areas, and the United States east of the Mississippi.

(c) The Monsoon lands, with special reference to the Indian Sub-Continent.

3. Map Work (One paper)

The map work should be carried on in connection with the general and regional geography and should include :—The study of maps published by the Ordnance Survey of Great Britain ; the use and study of atlas maps, including the advantages and disadvantages of the principal projections employed, climate and weather maps ; cartographical and diagrammatic representation of geographical data.

Geology

[Two papers and a practical examination.]

I. Physical Geology

(a) The earth as a planet ; origin and general characters of its chief surface features.

(b) The physical condition of the earth's crust and interior ; evidences of internal activity such as volcanic, seismic, and diastrophic phenomena.

(c) General characters and inter-relationships of rocks.

(d) The work of geological agents : the circulation of rock material, including the processes of denudation, transport, deposition, and deformation.

II. Mineralogy and Petrology

(a) Elements of crystallography and crystallographic projection and notation.

(b) The common rock-forming and vein-forming minerals : their physical characters, chemical composition, and modes of origin and occurrence.

(c) The simpler optical properties of the common rock-forming minerals and the physical principles on which these properties depend.

(d) The general characters and relationships of the chief types of sedimentary, igneous, and metamorphic rocks.

III. *Historical Geology*

The disposition of rocks and its representation on maps ; evidences of relative ages of rocks ; fossils, their preservation and distribution in rocks of different ages ; the geological systems, their broad characters and distribution in Great Britain.

Practical Work

Interpretation of simple geological maps in terms of rock-structure and its relation to topography ; expression of this interpretation by means of sections ; graphic methods of finding thickness, dip and strike of beds, of completing outcrops, and of tracing the underground extensions of strata.

Identification and description of common minerals and typical rocks, with and without the microscope ; exercises in projection of crystals ; identification and description of crystal forms of common minerals, both on models and on actual crystals.

Reference of fossils to their broad biological groups and geological period.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

General Physiology

[Two papers and a practical examination.]

The following outline is not to be regarded as a rigid syllabus but is given for the guidance of candidates as indicating the range of the theoretical and the practical part of the examination :—

1. The fundamental phenomena of life.
2. The cell. Differentiation of structure and function of cells. Cell division.
3. Elementary biophysics including surface tension, diffusion, osmosis, cell permeability and the colloidal state.
4. Elementary chemistry of proteins, carbohydrates and fats ; their origin, fate and significance in living matter.
5. Source and transformation of energy in living organisms. The relations between mechanical, chemical and thermal changes.
6. Enzyme action.
7. An elementary knowledge of mammalian physiology along the following lines :—
 - (a) The properties of muscle.
 - (b) Chief constituents of blood and their functions.
 - (c) General arrangement of the circulatory system. The heart and blood vessels and their control.
 - (d) Mechanism of respiration, the control of pulmonary ventilation and gaseous interchange.
 - (e) Secretion, digestion and absorption.
 - (f) Principles of nutrition and metabolism.
 - (g) Excretion. The formation and composition of urine.

- (h) Reproduction.
- (i) Chemical co-ordination and internal secretion.
- (j) Nervous co-ordination. General arrangement of the nervous system and a brief survey of the functions of its different parts. Reflex action.
- (k) The general principles of sensation.

Practical Examination

Candidates will be expected to have made a practical study of the following :—

1. Elementary experiments illustrating the phenomena and laws dealt with in the theoretical course.
2. The properties of skeletal muscle.
3. Factors influencing the heart beat, e.g., temperature, ions, electrical stimulation, exercise. Experiments on blood pressure in man.
4. Factors influencing pulmonary ventilation in man. Oxygen capacity and haemoglobin content of blood.
5. Simple experiments on hydrogen ion concentration and "buffering."
6. Experiments on the chemical properties and the digestion of the foodstuffs.
7. Detection of the chief constituents of urine. Estimation of urea.
8. Experiments on the field of vision, the "blind spot" and accommodation of the eye.
9. Staining and mounting of paraffin sections and the fixing and staining of fresh tissues. The recognition of the chief tissues and organs of the mammalian body.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Zoology

[Two papers and a practical examination.]

1. A study of the structure and of the elementary physiology of the rabbit.
2. The structure, mode of life and life-history of the following animals, to illustrate the general characteristics of the animal organization :—
Amoeba, *Euglena*, *Paramecium*, *Hydra*, *Obelia*, the earthworm, the crayfish, *Amphioxus*, the dogfish, frog and rabbit.
3. Elementary physiology : metabolism : nutrition (digestion, assimilation and food storage) ; respiration, excretion, movement, response to stimuli and reflex action ; growth and reproduction. The differences between plants and animals.

4. The modifications of structure, habit and life-history associated with parasitism (including the mode of transmission from host to host) as exemplified by *Monocystis*, *Trypanosoma*, the malarial parasite, the liver-fluke and the tape-worm.

Symbiosis.

5. The principles of classification and nomenclature. A discussion of the systematic position of the animals mentioned in paragraphs 2 and 4, and of their place in their respective phyla, and of these phyla in the animal kingdom.

6. The structure of a cell. Cell division. The multi-cellular organism illustrating morphological differentiation and the division of labour. The essential characteristics of the following :—epithelial tissues ; connective and supporting tissues (including the process of ossification) ; blood and lymph ; muscular tissues ; nervous tissues.

7. Sexual and asexual reproduction. The chief types of ova. Gameto-genesis. Fertilization and cleavage. The germ layers and their formation in *Amphioxus*, frog and chick. The development and metamorphosis of the frog. The development of the chick up to the end of the third day of incubation. The development and functions of the foetal membranes of the chick and mammal.

8. Variation and heredity, including a simple treatment of the facts of genetics and nuclear cytology.

9. The evidence bearing on the occurrence of organic evolution. The theories of Lamarck and Darwin as to the method of evolution.

Practical Work

Observations on living animals should be made wherever possible. Candidates are expected to make adequate labelled drawings of all the preparations they examine and of all the dissections they make.

1. The dissection, or microscopical examination of whole mounts and sections, of the animals mentioned in paragraphs 2 and 4 (except the malarial parasite and *Trypanosoma*).

2. The examination of the skeleton of the vertebrate types mentioned in paragraph 2, together with the skull of the dog.

3. The examination of preparations representing the chief varieties of the tissues mentioned in paragraph 6.

4. The examination of prepared sections of the following vertebrate organs :—skin, stomach, intestine, liver, kidney, ovary, testis and spinal cord.

5. The preparation of stained permanent mounts of suitable whole animals, parts of animals and tissues.

6. A study of the external changes during the development of the frog from fertilization to the end of metamorphosis.

7. The examination of whole mounts of and representative sections through :—

(a) The early stages of frog development to the time of the first appearance of the external gills.

(b) Stages illustrating the development of the chick during the first, second and third days.

Practical Examination

The candidates must be prepared to examine microscopically, to dissect, and to describe specimens or parts of the animals comprised

in paragraphs 2 and 4 in the foregoing syllabus and to determine the zoological position of specimens in accordance with paragraph 5 above.

The list of animals may be changed from time to time, but two years' notice of any change will always be given.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

UNIVERSITY OF LONDON



REGULATIONS

FOR THE

B.Sc. FINAL

EXAMINATIONS

[GENERAL AND SPECIAL (OLD REGULATIONS)]

for External Students

[NOTE.—Revised regulations for the B.Sc. Special Examinations in Botany, Chemistry, Geography, Geology, Mathematics, Physics, Psychology and Statistics are published separately.]

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations, which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTES

1. Candidates for the B.Sc. General Degree or the B.Sc. Special Degree under the Old Regulations are required to satisfy the minimum University and Faculty entrance requirements, to have been registered as External Students preparing for the Degree of B.Sc., to have passed the Intermediate Examination in Science or to have obtained exemption therefrom, and to pass such Final Examinations as may be prescribed.

2. The standard of the Final Examination is that which would normally be required of a full-time student after a course extending over two academic years after completing the Intermediate examination.

3. The Regulations for the B.Sc. Special Degrees are being revised and these revised Regulations, are at present alternative to those set out below. Revised Regulations have now been introduced for the B.Sc. Special Degree in Botany, Chemistry, Geography, Geology, Mathematics, Physics, Psychology and Statistics and these are published in a separate pamphlet obtainable on application to the External Registrar.

4. The following will be granted complete exemption from the Intermediate Examination :—

(a) A candidate who holds a Higher School Certificate or a General Certificate of Education with passes at the Principal (Main) Subject standard or Advanced Level in an appropriate combination of subjects. For details see Intermediate Science Regulations pamphlet.

(b) A candidate who has passed the Internal Intermediate Examination in Science.

(c) A candidate who, at the Intermediate Examination in Science under the Old Regulations for Internal or for External Students, passed in three subjects, provided that the subjects in which he passed comply with the normal requirements for the examination.

(d) A candidate who has passed the Second Examination for Medical Degrees of the University of London and who wishes to proceed to the B.Sc. Special Examination in Anatomy (*in 1954 only*), Chemistry or Physiology.

(e) A candidate who has passed the Intermediate Examination in Pharmacy, Agriculture, Horticulture or Engineering as an Internal or as an External Student of the University of London.

(f) A candidate who has passed, on one and the same occasion, at the Intermediate Examination in Engineering (Old Regulations) in the subjects Pure Mathematics ; Applied Mathematics ; Heat, Electricity and Magnetism ; Sound and Optics.

5. The Regulations for the Intermediate Examination are contained in a separate pamphlet which may be obtained on application to the External Registrar.

B.Sc. EXAMINATION

General and Special (Old Regulations)

1. The **B.Sc. General Degree** will be awarded to candidates who are successful in the Final Examination in three subjects. Successful candidates will receive First Class Honours, Second Class Honours, or a Pass Degree. Honours will not be awarded to a candidate who has availed himself of exemption from any part of the examination.

2. The **B.Sc. Special Degree** will be awarded to candidates who are successful in a principal subject and, except in Anatomy, Mathematics and Statistics, in a subsidiary subject. Successful candidates will receive First Class Honours, Second Class Honours, or a Pass Degree.

3. A candidate who, as an Internal or External Student, has obtained a Degree under one of the two alternatives will be permitted to present

himself for examination for a Degree under the other alternative after a further year's interval.

4. A graduate who has taken the B.Sc. Pass Degree under regulations in force prior to 1926 will be permitted to enter for a B.Sc. Special Degree under the present regulations, but will not be permitted to enter for the B.Sc. General Examination with a view to Honours. A graduate who has taken the B.Sc. Honours Degree will be permitted to enter for the B.Sc. General Examination, but not for the B.Sc. Special Examination except in another branch.

5. A candidate who has obtained either Pass or Honours at the B.Sc. Special Examination is not permitted to re-enter except in another branch.

6. A candidate who has obtained either Pass or Honours at the B.Sc. General Examination will not be permitted to re-enter the Examination.

7. Candidates who have taken the B.A. Honours Degree in Mathematics, Psychology, or Geography are not permitted to enter for the B.Sc. Special Examination in the same subject.

8. A candidate who has passed the B.A. General Examination with one or more subjects which are common to the B.A. and B.Sc. General Examinations and who enters subsequently for B.Sc. General, will be permitted to offer as one of his subjects (and only one) a subject in which he has already passed at B.A. General.

FACULTY REQUIREMENTS

A candidate who has satisfied minimum entrance requirements by means of a General Certificate of Education will be required to have passed in Mathematics at Ordinary or Advanced Level.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the B.Sc. General or B.Sc. Special Examination (except in the case of the B.Sc. Special Examinations held under Revised Regulations) each candidate must :—

- (a) have satisfied the minimum University and Faculty entrance requirements ;
- (b) have been registered as an External Student preparing for the B.Sc. General or B.Sc. Special Degree at least three academic years earlier ;
- (c) have completed the Intermediate Examination or have obtained exemption therefrom at least two academic years earlier ;
- (d) have obtained approval of candidature for the examination.

2. Each candidate for the B.Sc. General or B.Sc. Special Examination in Anatomy or Physiology or Statistics will be required, *in addition*, to comply with the special regulations which are set out in the syllabus for each of these subjects.

3. Each candidate for a B.Sc. Special Examination in which a subsidiary subject must be taken in addition to a principal subject, must apply for approval of candidature for both principal and subsidiary subjects at the same time, but will be permitted to take the examination in the subsidiary subject before the examination in the principal subject.

DATE OF EXAMINATION

The B.Sc. Examination shall take place once in each year, and shall commence on the first Thursday after 3 June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the B.Sc. Examination during the period October-November of the year next but one preceding the examination and not later than 7 December in that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 7 December, application may be accepted after that date on payment of a late fee of £1 1s. which is not returnable, but no application will be accepted after 28 January in the year of the examination.

Candidates who are proceeding to the B.Sc. Special Degree in Astronomy or to the examination in Advanced Subjects for the B.Sc. Special Degree in Mathematics or to the B.Sc. General Degree including the subject Astronomy will not be accepted under the regulations for late application after 1 December in the year preceding the examination

ENTRY TO EXAMINATION

The candidate lists (except for Astronomy and Mathematics, Advanced Subjects—Old Syllabus) will be opened on 17 January. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 21 February, and the candidate lists will be closed on 28 February.

The candidate lists of entrants offering Astronomy (General or Special) or Mathematics, Advanced Subjects (Old Syllabus), will be opened on 20 November. Entry forms will not be despatched by post from the University after 24 December, and the candidate lists will be closed on 1 January.

No entry can be accepted after the candidate lists have been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

FEES

1. Fees are as follows :—

	£	s.
B.Sc. General—each entry	12	12
Supplementary subject	2	2
Qualifying examination for B.Sc. Special in Physiology	2	2
B.Sc. Special :—		
Principal and subsidiary subjects, each entry	13	13
Principal subject (where subsidiary not required)	13	13
Principal subject if exempt from subsidiary subject—		
first entry	13	13
do. do. each subsequent entry	11	11
Subsidiary subject taken before principal (or re-entry)	2	2
Principal subject (after passing subsidiary)—each entry	11	11

2. *Mathematics, Advanced Subjects (Old Syllabus)*

B.Sc. Special in Mathematics and Advanced Subjects taken together	13	13
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	£	s.
Advanced Subjects taken within two years from date of passing B.Sc. Special in Mathematics	no	fee
Advanced Subjects taken more than two years from date of passing B.Sc. Special in Mathematics	2	2
Re-entry in Advanced Subjects	3	3

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for Final Examinations taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

3. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

4. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

TIME TABLE

The examination shall be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 14 August the External Registrar shall publish (a) a list of the candidates successful at the General Degree Examination ; (b) a list of the candidates successful at the Special Degree Examination, both lists being arranged by the examiners in the several departments, under their respective heads in three divisions, viz. :—First Class Honours, Second Class Honours and Pass, and in alphabetical order in each division.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) The following candidates are eligible to apply for an Aegrotat Degree :—

(a) Candidates at the External B.Sc. (General) Examination who have satisfied the examiners in two subjects and have completed part of the examination in the third subject.

(b) Candidates at the External B.Sc. (Special) Examination,

(i) who have entered for examination in both principal and subsidiary subjects and have completed more than half of the examination ;

(ii) who, having already passed in, or been exempted from, the subsidiary subject, have entered for examination in the principal subject only and have completed more than half of the examination in the principal subject ;

- (iii) who, having been previously credited with First or Second Class Honours in the principal subject, have entered for re-examination in the subsidiary subject only, and have completed half the examination in such subsidiary subject.
- (2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.
- (3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.
- (4) An Aegrotat Degree will be awarded without distinction or class.
- (5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.
2. A diploma for the Degree of B.Sc. under the seal of the University shall be delivered to each successful candidate.
3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

B.Sc. GENERAL EXAMINATION

1. Candidates for a General Degree shall be examined in three of the following sixteen subjects :—

	<i>Written Papers</i>	<i>Practical</i>
(1) Anatomy	Two 3-hour	Practical and oral of 3 hours
(2) Anthropology	Three 3-hour	—
(3) Astronomy	Two 3-hour	Not exceeding 6 hours
(4) Botany	Two 3-hour	"
(5) Chemistry	Two 3-hour	"
(6) Geography	Two 3-hour	"
(7) Geology	Two 3-hour	"
(8) Logic and Methodology	Three 3-hour	—
(9) Applied Mathematics	Three 3-hour	—
(10) Pure Mathematics	Three 3-hour	—
(11) Military Studies	Three 3-hour	—
(12) Physics	Two 3-hour	Not exceeding 6 hours
(13) Physiology	Two 3-hour	Not exceeding 9 hours
(14) Psychology	Two 3-hour	Not exceeding 6 hours
(15) Statistics	Two 3-hour	"
(16) Zoology	Two 3-hour	"

2. Candidates offering Statistics must offer Pure or Applied Mathematics as one of the other two subjects, but may not offer both.

3. Candidates shall not be approved by the examiners unless they have shown a competent knowledge in each of the three subjects which they have selected.

4. No candidate, offering an experimental science subject, will be allowed to pass unless he satisfies the examiners in the practical part as well as the written part of the examination in the subject chosen.

5. In certain subjects questions will be set involving (a) the translation of passages from French and/or German, and (b) answers with regard to the subject-matter thereof. Candidates offering such subjects are recommended to read some books or papers in French and/or German dealing with the subject offered.

6. All answers to examination questions shall be written in English unless instructions are given to the contrary.

7. For use in the practical examinations, candidates are permitted to bring (a) in Chemistry, any book or books they wish, including their own laboratory note-books; (b) in Geology, petrological microscopes and accessories; (c) in Physiology, their own laboratory note-books provided that these are certified by the teacher as a record of the candidates' own work; and (d) in Psychology, note-books containing mathematical formulae. Apart from the foregoing, candidates are not permitted to bring any books for use in the practical examinations.

SUPPLEMENTARY SUBJECTS

Candidates who have passed the B.Sc. General or Special Examination are admissible for examination in one or more supplementary subjects.

EXEMPTIONS

Note.—No exemptions are given from this examination in whole or in part except on the results of examinations of this University as follows :—

A candidate who has passed B.A. Honours or B.Sc. Special in a subject which is a subject of B.Sc. General will be exempted from the corresponding subject of B.Sc. General. In the case of Mathematics, the candidate will be exempted in either Pure or Applied Mathematics at B.Sc. General and must then offer two subjects neither of which shall be Pure or Applied Mathematics.

SYLLABUSES FOR B.Sc. GENERAL EXAMINATION

Anatomy

[Two papers and a practical and oral examination]

The course of study in Anatomy shall be carried out at an Institution approved for the purpose of the Second Examination for Medical Degrees, shall extend over six terms and shall include the following :—

- (1) A course of lectures and demonstrations, not less than 100 in all.
- (2) A course of dissections extending over not less than twelve months (i.e., four regular terms of University work). In this course the candidate must have dissected the whole body at least once to the satisfaction of his teacher.

(3) Courses with practical work in :—

- (a) Radiological Anatomy.
- (b) Vertebrate Embryology.
- (c) Histology.
- (d) Neurology.

Emphasis to be laid on the correlation of structure to function.

- (4) The consideration of human anatomy in the light of vertebrate evolution and genetics.
- (5) A practical introduction to methods of research, related to anatomical problems.

The practical and oral examination of three hours shall consist of :—

- (a) Regional Anatomy, including dissected parts and Radiological Anatomy.
- (b) Embryology, Histology and Neurology.
- (c) Essential Technical Methods.

Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Anthropology

[Five papers will be set on the following syllabus and candidates may select any three.]

Physical Anthropology

Zoological.—Man's place in nature as evidenced by the study of comparative anatomy and physiology ; special attention being paid to the group anthropomorpha.

Palaeontological.—The antiquity of man as evidenced by fossil and semi-fossilized remains.

Physiological and Psychological.—A comparative study of the bodily functions and mental processes ; special attention being paid to the comparative study of the senses.

Ethnological.—A comparative study of the physical characters which distinguish the various races and sub-races of men. Classification of the human race in accordance with physical characters. Geographical distribution of races, etc., and the influence of environment on physique.

Cultural Anthropology

Archaeological.—The antiquity of man as revealed by the earliest remains of his handiwork. The prehistoric periods, their characteristics, sequence, and duration. The survival of early conditions of culture in later times.

Technological.—The comparative study of arts and industries, their origin, development, and geographical distribution.

Sociological.—Comparative study of social phenomena and organization. Birth, education, marriage, and death customs and systems. Tribal and other associations, government and laws. Moral ideas and codes. Magical and religious practices.

Linguistic.—Elementary comparative study of language.

Ethnological.—Comparative study and classification of peoples, based upon cultural conditions and characteristics. Influence of environment upon culture.

The three papers are to be selected from the following :—

- (i) Social Anthropology.
- (ii) Racial Evolution and Variation.
- (iii) Cultural Evolution in Prehistoric Europe and the Near East.
- (iv) Primitive Technology.
- (v) *Ethnography of a Special Area.

*Areas approved for selection are :—

- (a) Eastern Africa.
- (b) Central Africa.
- (c) Western Africa.
- (d) Southern Africa.
- (e) America north of Mexico—Amerindian and Eskimo Cultures.
- (f) India (tribal cultures).
- (g) South-Eastern Asia.
- (h) Pacific Islands (Melanesia, Polynesia and Micronesia).
- (i) Australia and New Guinea.

Candidates must state, when applying for approval of candidature, which papers they select and if offering Ethnography, which Special Area. Candidates offering paper (v) are advised to offer paper (i) also.

Astronomy

[Two papers and a practical examination.]

The practical examination will be held towards the end of March or the beginning of April of each year. Candidates should bear in mind that the practical test in the use of instruments is an essential part of the examination and that first hand knowledge of their use in an observatory will be assumed.

Spherical Trigonometry.

Geometrical Optics, as far as is required for a general knowledge of the chief astronomical instruments.

Descriptive and spherical Astronomy. An acquaintance with the chief celestial phenomena, excluding the use of advanced analysis.

The elementary theory of elliptic motion (a knowledge of the Calculus not being necessarily assumed, but its use being allowed).

Elementary theory and use of astronomical instruments, determination and correction of instrumental errors.

The chief stages in the history of Astronomy.

Practical Examination

Candidates are required to bring to the practical examination their *original* note-books containing notes of observations and reductions, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Measurement of angular space and of time.

The use of the nautical almanac.

The use of Transit Circle, Altazimuth, Equatorial, Filar Micrometer, Position Circle, Theodolite, and Sextant.

Practical methods used for determining position at sea and on land, and for the establishment of temporary observatories.

Botany

[Two papers and a six-hour practical examination.]

- (1) The morphology and anatomy of plants.
- (2) A general introduction to plant physiology and biochemistry.
- (3) Plant ecology, and elementary soil science.
- (4) Elementary cytology and genetics, and the problems of evolution.
- (5) The features of special importance of the following groups, including some fossil forms :—Algae, Bryophyta, Pteridophyta, Spermatophyta ; Fungi, including Bacteria.
- (6) An elementary knowledge of the origin and history of the British Flora.

Practical Work

The practical examination will include :—

- (1) The description and examination, microscopical or otherwise, of any plants or parts of plants.
- (2) The reference to their appropriate systematic positions of plants or parts of plants.
- (3) Simple practical exercises in plant physiology.

Candidates are required to bring to the practical examination their *original* laboratory note-books and field note-books, for inspection by the examiners. Satisfactory evidence must be given that candidates have obtained adequate experience of field work.

Practical note-books must contain a certificate by their teachers, if any, that the work is the students' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Chemistry

[Two papers and a practical examination.]

Candidates will be required to show a general acquaintance with the five main divisions of the subject, viz. :—

- (1) General Theoretical Chemistry.
- (2) Inorganic Chemistry.
- (3) Organic Chemistry.
- (4) Physical Chemistry.
- (5) History of Chemistry since the time of Boyle.

Also to be practically familiar with the common methods of experiment.

It is desirable that candidates should be able to translate papers on chemical subjects in German into English. Full marks will not be awarded if a knowledge of this language is not shown.

Practical Examination

Candidates are required to bring to the practical examination their *original* laboratory note-books, which may include an account of any research work in which they have participated, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates must provide themselves with Platinum wire and foil and further may bring into the examination room, for use in the examination, prepared crucibles with a note of their approximate weight. No other chemical apparatus may be introduced into the examination room.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge ; centrifuge tubes ; water bath with cover pierced to take centrifuge tubes ; two long dropping pipettes ; micro burners ; wash bottles 100 cc. polythene squeezing type ; crucibles 25 mm. and 15 mm. ; spotting tiles (porcelain) and microscope slides ; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in. and block to hold these and centrifuge tubes ; rack for dropping pipettes ; long thin spatula ; Whatman papers (No. 120), 2 in. squares ; small porcelain dish ; forceps and tube holders ; anti-bumping tubes to fit in centrifuge tubes ; small conical flask 10 ml. ; pyrex tube fitted for testing evolved gases ; reagents ; strong acids in Jena T.K. bottles, other common reagents in bottles fitted with dropping pipettes.

Geography

The examination will consist of two written papers, and a written examination of not more than six hours on practical work, and of inspection by the examiners of the note-books and any other evidence of his practical work in the field that the candidate may desire to submit.

No candidate will be allowed to pass unless he satisfies the examiners in the practical part as well as in the theoretical part of the examination, nor unless the original note-books or other evidence of practical work in the field reach an adequate standard.

Paper 1. Europe (including British Isles) and the Mediterranean lands of Africa and Asia.

Paper 2. (a) One of the following areas, selected by the candidate:—

- (i) Asia, excluding the Mediterranean lands.
 - (ii) North America.
 - (iii) Africa, south of the Mediterranean lands.
 - (iv) South America.
 - (v) Australia, New Zealand, and the Pacific Islands.
- (b) General Physical Geography.

Practical examinations on the Sections I and II p. 1262.

Candidates must state, when applying for approval of candidature, which Area they select for Paper 2.

SYLLABUS

Regional Geography. The relief and land-forms in relation to the structure and climate. The distribution of soils and minerals. The river systems. Climate and weather conditions. The neighbouring seas and oceans, and their influence on the lands and their inhabitants. The distribution of natural vegetation, cultivated products, and animals. The sources of mechanical power. The distribution of industries as related to the foregoing physical factors. Trade centres and trade routes ; the character of the trade. The distribution of

population ; the chief racial, religious and linguistic characteristics of the people. A synthetic study of geographical regions. States and the interrelations of political, economic, and physical conditions.

General Physical Geography. A broad knowledge of the physical geography of the world to serve as a basis for the study of regional geography.

The earth as a planet ; its movements and relation to the sun ; the consequent distribution and seasonal variation of insolation over the earth's surface.

The atmosphere. Distribution and periodic variation of the pressure and temperature of the air, of air movements and wind systems, of humidity and precipitation ; climate types and regions.

The oceans. Form of sea and ocean beds. Temperature and salinity of oceans and seas ; wave and tidal movements and their effects ; ocean circulation, its origin and effects.

The lands. General classification of the materials of the earth's crust—sedimentary, igneous, and metamorphic rocks ; crustal movements—the normal cycle of erosion and its principal interruptions ; processes of denudation and deposition ; chief effects of glaciation ; development of river systems.

Practical Work

I. Representation and interpretation by maps and diagrams : (a) land forms ; (b) their development ; (c) their relation to structure ; (d) their influence on human geography. Candidates will be expected to have done field work on these topics and to be familiar with maps of the Ordnance Survey, Geological Survey and the International 1 to 1 million map.

II. Principles of Surveying, including an elementary knowledge of the following instruments : prismatic compass, plane-table, clinometer, aneroid barometer, chain, theodolite.

The principles of the following map projections :—Conical with one or two standard parallels, Bonne, polyconic, international, sinusoidal, Mollweide, Mercator, zenithal equidistant, zenithal equal area, and zenithal orthomorphic or stereographic. Candidates are expected to know the principle underlying each projection, its defects, and its suitability for particular purposes or areas.

Construction and interpretation of weather and climate maps. The cartographic and diagrammatic representation of geographical data.

Geology

[Two papers and a practical examination.]

The syllabus for the Intermediate Examination treated more fully, and in addition the following :—

1. *Mineralogy.*—The properties, diagnostic characters, relationships, modes of occurrence and origin of the chief rock-forming and vein-forming minerals.

2. *Petrology.*—Methods of petrological study. Classification and description of rocks ; their modes of origin ; the changes which they have undergone. The relations of rocks to one another.

3. *Palaeontology.*—Characters of the principal types of fossils (chiefly Invertebrata), and the distribution of life in past geological times.

4. *Stratigraphical Geology* (chiefly of the British Isles), and the fossils characteristic of successive periods.

Practical Work

(1) Reading and interpretation of geological and other maps, and the drawing of sections across them.

(2) Identification and description of common minerals, rocks, and fossils in hand-specimens ; and of the more important rocks and their constituents under the microscope.

Satisfactory evidence must be given of adequate instruction having been received by the students in the field.

Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates may bring petrological microscopes and accessories for use in the practical examination.

Logic and Methodology

[Three papers.]

Candidates will be examined in :—

Postulates of logic.

Terms. Formal division and definition.

Propositions and their import. Forms of immediate inference.

Syllogism and other varieties of deductive inference. Functions of the syllogism. Trains of reasoning. Characteristics and foundations of mathematical reasoning.

Relation of induction to deduction. Uniformity of nature. Causation. Induction and analogy.

Observation. Measurement of phenomena and the use of standards and units. The extension of observation by the use of instruments. Observation and experiment.

Inductive methods.

Empirical laws. Deductive method. Explanation. The function of hypothesis in inductive investigation. Laws of co-existence.

Approximate generalizations and the treatment of exceptional phenomena. Logical foundations of probability.

The logical requirements of scientific language. Definition and classification in science.

Meaning of necessity, possibility, and impossibility in scientific reasoning.

Correlation and classification of the sciences.

The special method of some branch of natural or mathematical science.

History of scientific method and discovery.

Applied Mathematics

[Three papers.]

The subjects of the Intermediate Examination treated more fully, a knowledge of elementary differential and integral calculus being assumed, together with :—

Simple parts of uniplanar kinematics.

General dynamical notions.

Motion of a particle under constant force. Motion of a particle under a central force varying inversely as the square of the distance or as the distance.

Rotation of a rigid body about a fixed axis, and simple cases of uniplanar motion of a rigid body.

Elementary theory of potential.

Common catenary and suspension bridge.

Pressures of liquids on plane areas, pressures of liquids on solid bodies wholly or partially immersed, and conditions of equilibrium of such bodies. Specific gravities and densities of substances, solid and liquid, and methods of determining them. Meta-centre in simple cases.

The elementary methods of graphical statics.

Pure Mathematics

[Three papers.]

Paper I will consist mainly of Algebra, Trigonometry, and Analytical Geometry; **Paper II** of Analytical Geometry and Calculus; **Paper III** of Section (iv).

The Pure Mathematics of the Intermediate Examination together with the following :—

Section (i)

Determinants of the second and third order. Partial fractions. Summation of easy series. Use of the binomial, exponential, logarithmic, sine and cosine series, absolute convergence and the d'Alembert's ratio test as applied to these series. Hyperbolic functions. Exponential values of sines and cosines. Complex numbers with their representation in a plane. Demoivre's theorem and easy applications.

Section (ii).

The simpler properties of plane figures involving straight lines and conic sections treated by the methods of co-ordinate geometry (excluding the use of homogeneous co-ordinates).

Section (iii).

Simple differentiation and integration of functions of one variable.

Maxima and minima of functions of one independent variable.

Use of Taylor's and Maclaurin's theorems.

The principle of superposition of small errors.

Tangents, normals, and curvature of plane curves.

Plane areas. Lengths of plane curves. Areas of surfaces of revolution.

Volumes of solids of revolution.

Section (iv).

The simple properties of plane figures involving straight lines and conic sections treated by Euclidean methods.

The straight line, the plane, the sphere, the ellipsoid referred to its principal axis.

Ordinary differential equations of the first order.

Linear equations of the first and second orders with constant coefficients. Partial differentiation and simple applications.

Military Studies

[Three papers.]

Paper 1 will relate to the General Principles of War.

Paper 2 will relate to Economic Problems of War.—The Control

and use of Manpower, Raw Materials, Shipping. The Planning and Procurement of War Supplies. The Supply and Distribution of Food and Civilian Supplies. War Finance, Prices and Wages Policy. Economic Problems of Occupation.

Paper 3, either (a) or (b) or (c).

Candidates should state, when applying for approval of candidature, which option they select and which section if offering 3 (c).

Paper 3(a) will relate mainly to the study of a Campaign, viz. :—

For 1954, 1955 and (provisionally) for 1956.

The Campaign in Burma, 1944-45. To be studied in the following Official Despatches :—

Report to the Combined Chiefs of Staff by the Supreme Allied Commander, South East Asia, 1943-45, Lord Mountbatten. (H.M.S.O., 1951. 17s. 6d.)

Operations in Burma and North East India 16/11/43-22/6/44. General Giffard. (H.M.S.O. 2s. Supplement to the London Gazette, 13/3/51. Map supplement, H.M.S.O., 1s.)

Operations in Assam and Burma, 23/6/44-12/11/44. General Giffard. (H.M.S.O., 2s. Supplement to the London Gazette, 30/3/51.)

Operations in Burma, 12/11/44-15/8/45. General Leese. (H.M.S.O., 5s. Second Supplement to the London Gazette, 6/4/51.)

Paper 3(b) will relate mainly to the influence of Air Power on Modern Warfare.

Paper 3(c) will relate to the applications of Science to Warfare.

The paper will be divided into 4 sections as below, the candidate to answer questions from 2 sections only. [Note.—It will be assumed that the student's knowledge of the basic sciences of the sections offered is at least of the standard of the General Certificate of Education, Advanced Level, or its equivalent.]

1. **Chemistry.**—Chemicals in War : Gas, Smoke, Incendiaries. Explosives and Ammunition. The Petroleum Industry.

2. **Physics.**—Theory and use of Optical Instruments in Warfare. Elementary Meteorology. Radio-location. Telecommunications. Atomic Warfare.

3. **Applied Mechanics.**—Ballistics. Applications of the Gyrostat. Reaction of Fluid and Moving Bodies. Elementary Strength of Materials. Theory of Structures. Characteristics and Applications of Engines.

4. **Biology.**—Physiology of Nutrition and Respiration. Muscular Work. Reactions to Environment. Elementary Bacteriology. Hygiene.

Physics

[Two papers and a practical examination.]

Questions will be set involving (1) translation of French and German passages and (2) answers in regard to the subject-matter thereof. Without answering the questions set in both these languages a candidate cannot make up the full number of questions to be answered.

The subjects for the Intermediate course, with the addition of the following, the whole being treated theoretically as well as experimentally.

General Physics

Fundamental notions of mass and force. Motion in a circle. Simple harmonic motion. Combinations of simple harmonic motions. Kinetic

energy and work. Moment of inertia. Kinetic energy of a rotating body. Rolling bodies. Torsional vibration of a body. Torsion balance. Compound pendulum and its applications. Gravitational constant and its determination. Young's modulus. Simple rigidity. Compressibility. Friction. Viscosity of liquids and gases. Surface tension. Diffusion. Osmotic pressure.

Sound

Distribution of velocity and pressure in sound waves. Experiments on the velocity of sound in gases. Calculation of velocity from elasticity and density. Fundamental tone and overtone of strings and air columns. Quality of sound. Longitudinal vibrations of rods. Determination of frequencies. Diatonic scale. Temperament. Effect on pitch due to motion of the source, of the receiver, and of the medium. Resonance. Forced and free vibrations. Reflection of waves. Stationary waves. Simple cases of interference of sound. Beats.

Heat

The methods which have been used to determine the most important thermal constants and the chief results which have been obtained. Volume, pressure, and temperature relations of gases, vapours, and liquids. Critical state. Solidification and liquefaction. Elements of kinetic theory of gases. The laws of thermodynamics. Isothermal and adiabatic changes in gases. Specific heats at constant pressure and constant volume and their relations. Carnot's cycle. Efficiency of reversible engines. Entropy. Thermodynamical scale of temperature. The laws of radiation: Stefan's Law. Distribution of energy in the spectrum. Applications to the measurement of temperature.

Light

The eye as an optical instrument. The cardinal points of combinations of two thin separated lenses. Qualitative study of focal lines. The optical principles of microscopes, telescopes, spectrometers, and sextants. Achromatic combinations. Methods of observation of infra-red and ultra-violet spectra. The wave theory. Explanation of reflection and refraction. Simple cases of interference of light. Diffraction by slits and gratings. Resolving power of simple lenses. Polarization by reflection and refraction. Double refraction. Nicol's prism. Coloration of thin crystalline plates in parallel pencils between polarizer and analyser. Rotation of the plane of polarization.

Magnetism and Electricity

The methods of determining magnetic declination, dip, and horizontal force. Magnetic properties of iron and steel. Permeability. Hysteresis. The effects of temperature. The magnetic circuit. Paramagnetism and diamagnetism. Theory of electrical condensers of simple geometrical forms. Specific inductive capacity and its measurement. Simple electrometers. Theory of attracted disc and quadrant electrometers. Accurate measurement of current, resistance, and electromotive force. Absolute measurements. Self and mutual induction. Simple alternating currents. Impedance. Electrical oscillations. The relation between electrostatic and electromagnetic units. Platinum thermometer. Bolometer. Theory of voltaic cells. Conduction in electrolytes. Thermo-electricity. Peltier and Thomson effects. Ionization and electrical conduction in gases. Elementary theory of electrons, determination of the ratio of charge to mass and

of the velocity for the case of the cathode stream. X-rays. Properties of the rays emitted by radioactive bodies.

Practical Examination

The following scheme is not exhaustive, and is intended merely to show the general nature of the exercises at the practical examination. The examiners are not precluded from setting other exercises (including such as may be given at the Intermediate) and practical problems illustrative of the principles set forth in the syllabus.

Use of the accurate balance with the various corrections. Calibration of a tube by means of a liquid. Determination of specific gravities. Determination of Young's modulus for a given wire by stretching and for a rod by bending. Determination of simple rigidity. Measurement of surface tension. Determination of the acceleration due to gravity by simple and compound pendulums. Use of sonometer to determine frequencies. Determination of velocity of sound by Kundt's tube. Coefficient of thermal expansion of liquids and solids. Expansion of air at constant pressure. Increase of pressure of air at constant volume. Specific heat by method of mixture and by method of cooling. The laws of cooling. Determination of latent heat of water and steam. Measurement of vapour pressure. Estimation of dew-point. Measurement of conduction of heat along rods of metals and through slabs of bad conductors. Measurement of focal lengths of mirrors and lenses and of their combinations. Determination of magnifying power of combinations of lenses. Use of spectrometer. Determination of refractive index of solids and liquids. Measurement of wave-lengths by gratings. Polarization of light by reflection and measurement of polarizing angle. Comparison of magnetic moments. Measurement of horizontal components of magnetic fields. Measurement of dip. Absolute measurement of current by galvanometer of known radius in a given field. Measurements with electrometers. Standardization of a galvanometer by electrolysis. Verification of Joule's Law of the heating effect of current. Comparison of resistances. Comparison of electromotive forces by the potentiometer. Use of ballistic galvanometer. Comparison of capacities of condensers.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. All books and note-books must be taken away by the candidates at the end of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Physiology

[Two papers, and a practical examination not exceeding nine hours in length.]

Candidates will be required to satisfy the University that their proposed course of study and previous training in the subject are adequate. Each application will be considered on its merits and candidates must submit a certificate of course of study, when applying for approval of candidature.

Application of physico-chemical laws to physiological processes. Surface tension and surface phenomena. Diffusion. Osmosis. Properties and functions of cell membrane. Cell permeability. The properties of colloidal solutions. The Donnan equilibrium.

Chemical constitution and properties of proteins, lipides and carbohydrates. Composition of tissues and body fluids.

Catalysis in biological processes. Enzymes : classification, composition and characteristic features.

Sources and transformation of energy in living organisms. Relation between chemical, mechanical and thermal changes. Work and efficiency.

Blood ; structure, composition, formation and destruction ; respiratory functions and buffer mechanisms. Immunity. Blood grouping. Lymph, tissue-fluid and cerebro-spinal fluid.

Anatomy of the heart and general arrangement of the circulatory system. The properties of cardiac muscle. Origin, transmission and control of the heart beat. Pressure changes and time relations in the cardiac cycle. Blood pressure and blood flow throughout the vascular system, and their nervous and chemical control.

Mechanics of respiration. Gaseous interchange. Control of pulmonary ventilation. Effects of depth and altitude. Circulatory and respiratory changes in exercise.

Mechanism and control of the secretion of digestive juices. Composition of juices. Digestion and absorption of foodstuffs. Movements of the alimentary tract.

Metabolism. Exchanges of matter and energy. Nitrogenous equilibrium. Intermediate metabolism of protein, fat and carbohydrate.

Regulation of body temperature. Functions of the skin.

Nutrition. Dietary requirements at different ages and under different conditions. Mineral metabolism. Vitamins : origin, properties and functions. Tissue oxidation.

Endocrine organs : functions and inter-relationships. Chemical constitution of hormones.

Excretory organs. Functions of the kidney. Composition and formation of urine. Micturition.

Reproduction. Development and functions of sex organs. Ovulation and spermatogenesis. Fertilization. Formation and functions of the placenta. Development of mammary glands. Parturition and lactation.

The physiology of striated muscle, smooth muscle and nerve. Excitation. The nerve impulse and its transmission centrally and peripherally.

General anatomy and functions of the nervous system in man :—origins, destinations and functions of the fibre tracts of the cerebro-spinal axis. Reflex action. Maintenance of tone and posture. Special functions of the brain stem, cerebellum and basal ganglia. Cerebral cortex, including functional localization and conditioned reflexes.

Sense organs : structure and function.

The autonomic nervous system.

Practical Work

A practical examination not exceeding (a) three hours in Histology and (b) six hours in Physiology, Experimental and Chemical.

Histology, including the staining and mounting of paraffin sections of the different organs of the body to show general structure and the various tissues of which they are composed. The preparation from fresh material of suitably stained permanent specimens of the elementary

tissues including blood, lymph and marrow, nerve cells and nerve fibres. The staining of specimens of the spinal cord and medulla to show nerve fibres and nerve cells.

Animal experiments. Experiments on the frog muscle-nerve preparation which illustrate the physiological properties of muscle and nerve. The properties of cardiac muscle, and the initiation and control of cardiac rhythm in the frog. Study of the mammalian heart by perfusion of the coronary circulation. The properties of smooth muscle as shown by the intestine and uterus. Suitable experiments to illustrate the action of hormones.

Experiments on the human subject. Blood counts and colour index. Blood-grouping. The adaptability of the circulatory and respiratory systems to changed conditions, including experiments on circulation in the skin. Metabolism, metabolic rate, work. Factors influencing the flow and composition of urine. Reflex time. Experiments on eye : visual acuity, accommodation, measurement of blind spot, field of vision, binocular vision, colour vision, etc. Experiments on hearing and equilibration.

Chemical physiology. Qualitative tests which illustrate the properties of carbohydrates, lipides and proteins in food and animal tissues. Separation and estimation of fats, carbohydrates and proteins in foods and tissues. Experiments to illustrate the action and properties of enzymes. Quantitative work on enzymes. Digestion : test meals, qualitative and quantitative experiments on digestive juices. Urine chemistry ; qualitative tests for and estimation of the main constituents. Experiments on tissue oxidation.

Blood : coagulation, spectroscopic analysis, preparation of derivatives of haemoglobin. Estimation of haemoglobin, oxygen capacity, percentage oxygen saturation and carbon dioxide content. Estimation of (blood constituents such as) sugar, urea.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. In the Chemical Physiology part of the practical examination candidates may make use of their note-books in carrying out any practical test which they may have to perform. Note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Psychology

[Two papers and a practical examination.]

The examination will consist of the following parts :—

(i) *General and Comparative Psychology* (One paper).

Scope and methods of psychology. The relation of analytical psychology to physiological, pathological, and comparative psychology.

The relation of psychical states to physiological processes. Sub-consciousness. Unconsciousness.

Analysis and classification of mental states.

Fundamental processes of mental development : attention, discrimination, assimilation, association, apperception.

Sensation and perception. Illusions.

Images. Association of ideas and suggestion. Memory. Memory-types. Disturbances of memory. Apprehension of time. Dreams. Hallucinations and hypnotic states.

Productive imagination. Early forms of imagination in individual and in race. Exceptional forms of imagination.

Abstraction and generalization. Conception. Judgment and reasoning. Thought and language. Aphasia.

Idea of self and its variations, normal and abnormal.

Belief. Primitive forms of belief.

Pleasure and pain. Bodily concomitants of feeling. Emotion and its expression. Classification of emotions.

Instinct, imitation, voluntary movement and habit. Appetite and desire. Higher forms of volition. Normal and abnormal types of volition.

[*Note*.—Candidates are expected to show some knowledge of mental phenomena as displayed in primitive races and the animal kingdom.]

(ii) *Experimental Psychology* (One paper).

Qualities of sensation. Theory of specific nervous energy. Touch ; temperature sense ; pain. Tastes and smells. Simple and complex tones ; noises and their analysis ; partial tones, beats, combination tones. Light and colour sense. Movements. Effort, muscular fatigue, sense of weight. Equilibrium and orientation.

Intensities of sensation ; liminal sensations ; threshold of difference. Weber's law. Fechner's laws. The psycho-physical methods.

Analysis of perception ; localization and projection of impressions. Tactile space ; spatial perception of the blind. Visual space ; binocular vision. Eye movements and accommodation. Perception of form, distance, and size. Visual perception of movement. Binaural audition. Localization of sound. Consonance, harmony, tact, rhythm. Illusions. Preperceptions.

Reaction-time, experiments and methods. Simple and complex reaction-times. Subjective estimation of time length and time order.

Experimental investigation of recognition, memory, association of ideas, span of apprehension.

Fatigue and practice in mental work. Action of drugs on mental processes. The physiological accompaniments of pleasure, pain, the emotions, attention, etc.

(iii) *Experimental Psychology* (Practical and oral examination).

Examination on apparatus and technical methods generally.

Examination of an individual on acuity of senses ; colour vision ; tone discrimination ; estimation of spatial and temporal magnitudes ; reaction-times ; association of ideas, etc.

Examination on the psycho-physical methods and on the treatment of statistics.

Examination on the method of carrying out an experimental investigation submitted to the candidate.

Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Statistics

[Two papers and a practical examination.]

Candidates whose course of study or training has been

pecially approved by the Council for External Students may be admitted to the B.Sc. (General) Examination in Statistics. Each application for admission to the examination will be considered individually and candidates must submit, when applying for approval of candidature, a detailed statement of their proposed courses of study and their previous training and experience and/or their prospective training and experience up to the date of the examination. Such a statement should include a description of any applied statistical work they have carried out or propose to carry out privately, copies of any non-confidential reports they have prepared or statements from employers describing the scope and content of their practical experience. Candidates should bear in mind that a practical test involving applications to data of the statistical techniques outlined in the syllabus is an essential part of the examination and that ability to use the common mechanical calculators—multiplying and adding machines—would be assumed by the examiners.

Candidates offering Statistics must offer either Pure or Applied Mathematics as one of the two other subjects, but may not offer both.

SYLLABUS

Preparation and discussion of data, schedules of inquiry, tabulation and handling of records. Graphic representation of statistical data in the case of one or two variates ; frequency distributions ; discrete and continuous variates ; measures of location, dispersion, skewness and kurtosis. An elementary knowledge of the method of moments and its limitations. Binomial, Poisson, normal and hypergeometric distributions.

The normal curve its properties and the uses of tables of the probability integral. Simple methods of interpolation, extrapolation and graduation.

Correlation, regression, association and contingency ; grade and rank correlation. Partial correlation and multiple regression. Elements of the mathematical theory of probability, including the theory and practice of sampling. Derivation of the sampling distributions of the mean and variance from a normal population. Standard errors. Tests of significance of the mean and regression coefficient, for the difference between two means or two regression coefficients and for the variance ratio in sampling from a normal population. Tests of goodness of fit. Elements of the analysis of variance and its application. Elements of experimental design. Elements of the statistical analysis of time series ; the determination of trend, the study of oscillations and random deviations, practical methods of analysis including the variate difference method.

The examination will include a practical test in the application to numerical data of the theory covered by the syllabus. Candidates will be required to submit note-books recording such statistical work as they may have done ; the practical paper will include alternative questions dealing with the data from various fields of application of statistics in accordance with the subject chosen by candidates to make up the three required.

Zoology

[Two papers and a practical examination.]

The main facts and principles of Zoology as exemplified by :—

(a) An elementary study of the comparative anatomy of the phyla named below in (b), together with the classification founded on it.

(b) A detailed study of the anatomy, habits and life-history of *each* of the named types (*or equivalent substitutes*) together with a consideration of the functions of their various organs (observations to be made on living animals wherever possible).

PROTOZOA : Amoeba, Polystomella, Actinosphaerium, Sphaerozoum, Euglena, Ceratium, Trypanosoma, Paramecium, Opalina, Vorticella, Ephelota, Monocystis, Eimeria, and malarial parasite.

PORIFERA : Grantia.

COELENTERATA : Tubularia, Obelia, Aurelia, Physophora, Alcyonium an actinian, Hormiphora.

PLATYHELMIA : Leptoplana, Fasciola, Taenia.

NEMERTINEA : A nemertine.

NEMATHELMIA : Ascaris.

CHAETOGNATHA : Sagitta.

ROTIFERA : A rotifer.

PHORONIDEA : Phoronis.

SIPUNCULOIDEA : Sipunculus.

POLYZOA : Bugula, Pedicellina.

BRACHIOPODA : Lingula.

ANNELIDA : Nereis, Tubifex, Hirudo.

ECHINODERMATA : Asterias.

MOLLUSCA : Buccinum, Aplysia, Helix, Anodonta, Sepia.

ARTHROPODA : Daphnia, Lepas, Astacus, Carcinus, scorpion, spider, Peripatus, cockroach.

HEMICHORDATA : Balanoglossus.

UROCHORDATA : Ciona.

CEPHALOCHORDATA : Amphioxus.

CYCLOSTOMATA : Petromyzon.

PISCES : Raia, Gadus.

AMPHIBIA : Salamandra, Rana.

REPTILIA : Lacerta, Tropidonotus.

AVES : Pigeon.

MAMMALIA : Cavia.

(c) The elements of cytology and histology.

(d) Asexual and sexual reproduction and parthenogenesis. The various types of segmentation, gastrulation and germ layer formation. The development of the characteristic embryos and larvae of the different phyla, and the elements of experimental embryology, the later development of the organs of a vertebrate.

(e) An elementary study of genetics.

(f) Variation, principles of classification, evolutionary evidence and theories of evolution.

(g) Ecological and other factors which influence the distribution of animals.

Practical Work

The above syllabus (Sections a-g) will also form the basis for the practical examination.

Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidate at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

B.Sc. SPECIAL EXAMINATION

1. Candidates for the Special Degree may select any one of the branches of Science set out below, and, in addition, unless exempted therefrom, must satisfy the examiners (except in Anatomy, Mathematics and Statistics), in a subsidiary subject.

		<i>Written</i>	<i>Practical</i>
(1) Anatomy (<i>in 1954 only</i>)	Six	3-hour	2 days including an oral test
(2) Anthropology, Physical and Cultural	Seven	3-hour	1 day
(3) Astronomy	Six	3-hour	2 days
(4) Botany	Six	3-hour	2 days
(5) Chemistry	Six	3-hour	2 days
(6) Geography	Nine	3-hour	—
(7) Geology	Six	3-hour	2 days
(8) Mathematics	Eight	3-hour	—
(9) Physics	Six	3-hour	2 days
(10) Physiology	Six	3-hour	3 days
(11) Psychology	Six	3-hour	2 days
(12) Statistics	Eight	3-hour	2 days
(13) Zoology	Six	3-hour	2 days

[Note.—Revised regulations have been introduced for candidates taking Botany, Chemistry, Geography, Geology, Mathematics, Physics, Psychology and Statistics and are at present alternative to those set out below. The Revised Regulations can be obtained on application to the External Registrar. For dates during which the Old and Revised Regulations are in operation, see under the respective subject headings.]

2. No candidate will be permitted to take more than one branch at one and the same time, but he may take a second branch after an interval of at least one year.

3. No candidate who has taken B.A. Honours in Mathematics or in Psychology or in Geography will be permitted to take these subjects at the B.Sc. Special Examination.

4. In each branch except Geography, Mathematics and Psychology one of the papers will consist of subjects for one or more essays (see syllabuses below). A wide choice of subjects will be allowed, the object of this test being to ascertain whether the candidate can express himself with accuracy and lucidity. In Psychology, questions of an essay type will be set in one of the two papers on General Psychology.

5. In certain subjects (see syllabuses below) questions will be set involving (a) the translation of passages from French and/or German, and (b) answers with regard to the subject-matter thereof. Candidates offering such subjects are recommended to read books or papers in French and/or German dealing with the subject offered.

6. All answers to examination questions shall be written in English unless instructions are given to the contrary.

7. The class assigned to candidates will depend solely on the examination in the principal subject.

8. A candidate who enters for the principal and subsidiary subjects on the same occasion and fails in the subsidiary subject will, if the examiners have recommended him for First or Second Class Honours in

the principal subject, be credited provisionally with such Honours and allowed to enter for re-examination in the subsidiary subject alone, on one subsequent occasion only, and within one year from the publication of the Pass List for the examination in question ; if he is then successful, the Degree will be awarded. A candidate who is recommended for a Pass only in his principal subject and fails in his subsidiary subject will not be credited with any part of the examination.

9. For use in the practical examinations, candidates are permitted to bring in :—

(a) **Chemistry and Statistics**, any book or books they wish, including their own laboratory note-books ;

(b) **Geology**, petrological microscopes and accessories ;

(c) **Physiology**, any book or books they may wish, including their own laboratory note-books ;

(d) **Psychology**, note-books containing mathematical formulae.

Apart from the foregoing, candidates are not permitted to bring any books for use in the practical examinations.

SUBSIDIARY SUBJECTS

1. Except in **Anatomy, Mathematics and Statistics**, and as provided for under "Exemptions" below, every candidate for the B.Sc. Special Degree will be required to satisfy the examiners in a subsidiary subject.

2. Candidates are required to select *one* of the following approved subjects :—

<i>Special Subject</i>	<i>Approved Subsidiary Subjects</i>
Anthropology, Physical and Cultural	Geography or Geology or Physiology or Psychology or Zoology.
Astronomy	Pure Mathematics or Applied Mathematics.
Botany	Chemistry or Geography or Geology or Pure Mathematics or Applied Mathematics or Physiology or Physics or Zoology.
Chemistry	Botany or Geology or Pure Mathematics or Applied Mathematics or Physiology or Physics or Zoology.
Geography	Any subject of the B.Sc. (General) Examination <i>except</i> Geography.
Geology	Botany or Chemistry or Geography or Pure Mathematics or Applied Mathematics or Physics or Zoology.
Physics	Pure Mathematics or Applied Mathematics.
Physiology	Anatomy or Botany or Chemistry or Pure Mathematics or Applied Mathematics or Physics or Psychology or Zoology.
Psychology	Any subject of the B.Sc. (General) Examination <i>except</i> Astronomy, Geology, Psychology and Statistics.

Zoology**Botany or Chemistry or Geology
or Pure Mathematics or Applied
Mathematics or Physiology or
Physics.**

3. Subjects other than those approved may be offered as subsidiary subjects only with the permission of the Council for External Students.

4. The examination for the subsidiary subject will be the same as for B.Sc. General in that subject ; alternative written papers on the same syllabus and of the same standard as B.Sc. General will be set if necessary.

5. A candidate may enter for examination in his subsidiary subject either on the same occasion as he enters for examination in the principal subject (provided the necessary intervals have been observed), or before, i.e., at any other B.Sc. Examination held subsequently to his passing the Intermediate Examination in Science. Failure in the principal subject does not involve re-examination in the subsidiary subject, whether a pass has been obtained in this subject prior to or at the same time as the examination in the principal subject.

EXEMPTION FROM SUBSIDIARY SUBJECT

No exemptions are given from this examination in whole or in part except on the results of examinations of this University as follows :—

1. Graduates in Science (Horticulture) are allowed to present themselves at the B.Sc. Special Examination in Botany or Chemistry, not less than one year after taking the Degree of B.Sc. (Hort.), and such candidates are exempt from examination in a subsidiary subject.

2. Candidates who have passed the Final Examination in Arts (General or Honours) or Science (General or Special—or under old regulations, Pass or Honours) with some subject which is approved as a subsidiary subject in connexion with their principal subject will be exempted from examination in a subsidiary subject.

3. Graduates in Pharmacy will be exempted from examination in a subsidiary subject when entering for B.Sc. Special in Chemistry, Botany, or Physiology.

4. Graduates in Agriculture will be exempted from examination in a subsidiary subject when entering for B.Sc. Special in Chemistry or Botany or Geography.

5. Candidates who have passed the Second Examination for Medical Degrees will not be required to offer a subsidiary subject for B.Sc. Special in Anthropology.

6. Candidates who have passed the Second Examination for Medical Degrees or the B.D.S. Degree of this University, will be permitted, after an interval of not less than one year, to enter for B.Sc. Special in Chemistry or in Physiology without having to pass in a subsidiary subject at the Final Examination.

7. A candidate who at a B.Sc. Special Examination fails to satisfy the examiners shall not as a result of that examination be awarded a B.Sc. General Degree ; but he may be credited as for a subsequent examination with having satisfied the examiners in a subsidiary subject for the B.Sc. Special Examination.

8. A candidate who as an Internal Student has passed the examination in a subsidiary subject or in a two-year ancillary subject, may be credited with it as a subsidiary subject for an External Degree provided that the ancillary or subsidiary subject has been passed at a standard equivalent to, and on a syllabus commensurate with, that required for External Students.

9. A candidate who has taken the B.A. or B.Sc. General Examination and, while failing in the examination as a whole, has satisfied the examiners in two subjects, may be credited with one of those subjects as a subsidiary subject for the B.Sc. Special Examination, provided that it is included in the list of subsidiary subjects for the principal subject to which he proposes to proceed.

SYLLABUSES

(PRINCIPAL SUBJECTS)

Anatomy (in 1954 only)

No course in this subject will be allowed to run concurrently with a course for the Final M.B., B.S. Examination. Candidates will not be required to present any subsidiary subject. The Degree is open to the following :—

(a) Candidates who have passed the Second Examination for Medical Degrees.

(b) Candidates who have passed the Intermediate Examination in Science with the subject Zoology, attended a course of study extending over not less than one academic year at an Institution approved for the purpose of the Second Examination for Medical Degrees, and passed an examination in the subjects of this course which are as follows :—

(1) Human Anatomy, Neurology and Embryology. (2) Practical Human Anatomy (including the dissection of the whole body, (3) Physiology. (4) Elementary practical Physiology. (5) Histology (including practical Histology).

[Note.—The qualifying examination to be taken by candidates in category (b) will normally consist of the papers and practical examinations set for the Second Examination for Medical Degrees in the above subjects.]

The course for the Special Degree must be carried out at an Institution approved for the purpose of the Second Examination for Medical Degrees, extend over one academic year and include :—

1. Practical training in methods of research, e.g., experimental, radiological, biometrical, comparative—related to anatomical problems.

2. Advanced courses with practical work in :—

(a) Vertebrate Embryology.

(b) Histology.

(c) Neurology.

Emphasis to be laid on the correlation of structure to function.

3. The consideration of human anatomy in the light of vertebrate evolution and genetics.

The examination will consist of :—

Six papers of three hours each dealing with the several branches of the subject. In one of these papers an essay will be set selected from a list of at least three subjects.

Candidates will be required to translate and comment in English on the subject-matter of short passages in French and German. Dictionaries will be provided by the University.

Four practical examinations of three hours each during which candidates will further be tested by means of oral examination.

Anthropology, Physical and Cultural

Questions will be set involving (1) translation of French and German passages and (2) answers in regard to the subject-matter thereof. Without answering the questions set in *both* these languages a candidate cannot make up the full number of questions to be answered.

One 3-hour paper will consist of subjects for an essay.

The syllabus is the same as that for the General Examination. (See page 1258/9.)

Astronomy

The practical examination in Astronomy will be held towards the end of March or the beginning of April in each year. Candidates should bear in mind that the practical test in the use of instruments is an essential part of the examination and that first-hand knowledge of their use in an observatory will be assumed.

One 3-hour paper will consist of subjects for one, two or three essays.

The subjects of the curriculum for the B.Sc. (General) Examination (see p. 1259), carried to a more advanced stage, involving the use of more difficult mathematical methods and including the following :—

The theory of optics, so far as is necessary to understand the working of astronomical instruments, including spectrosopes. Map projections and planispheres. Measurements and reduction of celestial photographs. Elementary theory of the figure of the earth. Elementary dynamical theory of precession and nutation, and of variation of latitude. General theory of celestial motions ; the elements of an orbit ; general explanation of perturbations ; the different classes of inequalities. Theory of the reduction of mean to apparent place for a star. Method of least squares and treatment of observations. The classification of stars according to spectral types. Determination of line of sight velocities by means of the spectroscope. Determination of the solar motion. Distribution and motion of the stars in space. Determination of orbits of visual and spectroscopic binaries. The measurement of magnitude. Characteristics of variable stars. Information given by the spectroscope concerning the physical condition of celestial bodies.

Practical Work

The subjects of the curriculum for the B.Sc. (General) Examination (see p. 1259), carried to a more advanced stage, together with two of the following :—

1. Photometry.
2. Celestial Photography.
3. Celestial Spectroscopy (visual and photographic).

Botany

For examinations up to and including 1956 only. For details of alternative revised regulations for examinations in and after 1954, see separate pamphlet.

One 3-hour paper will consist of subjects for an essay.

The following outline indicates the range of the examination for the general guidance of students and teachers :—

Botany in all its branches, including :

1. The morphology, anatomy and histology of the plant body, including a detailed knowledge of cell-structure.
2. The physiology of plants.
3. Evolution and genetics.
4. The ecology of plants.
5. The taxonomy and phylogeny of plants, recent and fossil.
6. The geographical distribution of plants.
7. The history of Botany.

Candidates are required to bring to the practical examination their *original* note-books, for inspection by the examiners, containing the record of their laboratory work which may include a record of any research work in which they have participated. These must be duly certified by the teacher, if any, that the work is the candidates' original work carried out in the laboratory from specimens, and will be taken into account in estimating their qualifications ; provided only that the research work be not allowed to take the place of such sound general knowledge of Botany as should be required from a candidate taking the Special Degree. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates will be permitted to provide for themselves and use hand-microtomes if they so desire.

Chemistry

For examinations up to and including 1955 only. For details of alternative revised regulations for examinations in and after 1952, see separate pamphlet.

The syllabus for the B.Sc. General Degree is identical, but the standard required for the B.Sc. Special Degree will be considerably higher.

Candidates will be required to show a general acquaintance with the five main divisions of the subject, viz. :—

- (1) General Theoretical Chemistry.
- (2) Inorganic Chemistry.
- (3) Organic Chemistry.
- (4) Physical Chemistry.
- (5) History of Chemistry since the time of Boyle.

and to be practically familiar with the common methods of experiment.

It is desirable that candidates should be able to translate papers on chemical subjects in French and German into English. Full marks will not be awarded if a knowledge of these languages is not shown.

One 3-hour paper will consist of subjects for two essays.

Candidates are required to bring to the practical examination their *original* note-books, for inspection by the examiners, containing the record of their laboratory work, which may include a record of any research work in which they have participated. These must be duly certified by the teacher, if any, that the work is the candidates' original experimental work carried out in the laboratory, and will be taken into account in estimating their qualifications ; provided only that the research work be not allowed to take the place of such sound general knowledge of Chemistry as should be required from a candidate for the Special Degree. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates must provide themselves with platinum wire and foil and further may bring into the examination room, for use in the examination, prepared crucibles with a note of their approximate weight. No other chemical apparatus may be introduced into the examination room.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examina-

tions, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centifuge ; centrifuge tubes ; water bath with cover pierced to take centrifuge tubes ; two long dropping pipettes ; micro burners ; wash bottles 100 cc. polythene squeezing type ; crucibles 25 mm. and 15 mm. ; spotting tiles (porcelain) and microscope slides ; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in. and block to hold these and centrifuge tubes ; rack for dropping pipettes ; long thin spatula ; Whatman papers (No. 120), 2 in. squares ; small porcelain dish ; forceps and tube holders ; anti-bumping tubes to fit in centrifuge tubes ; small conical flask 10 ml. ; pyrex tube fitted for testing evolved gases ; reagents : strong acids in Jena T.K. bottles, other common reagents in bottles fitted with dropping pipettes.

THE NEIL ARNOTT STUDENTSHIP IN CHEMISTRY

A Neil Arnott Studentship in Chemistry will be awarded on the result of the B.Sc. Special Examination in Chemistry.

For full particulars see the Scholarships Pamphlet.

Geography

For examinations up to and including 1955 only. For details of alternative revised regulations for examinations in and after 1953, see separate pamphlet.

The examination will consist of nine written papers, including one on map work, and the inspection by the examiners of the original note-books and any other evidence of his practical work in the field that the candidate may desire to submit.

Candidates must state, when applying for approval of candidature, which regions they select under (ii), (iii) and (iv) of Regional Geography, their Special Subjects, and in 4 (f), (h) or (i) the options they select.

1. General Regional Geography (five papers) :—

(i) The British Isles ; (ii) France or Germany ; (iii) Europe without detailed reference to British Isles or the country selected under (ii) ; (iv) *Either* North America *or* Asia ; (v) The remaining Continents.

2. Physical Basis of Geography (one paper).

3. Map work (one paper).

4. *Two* of the following subjects (one paper in each) :—

(a) Cartography.

(b) Geomorphology.

(c) Climatology and Oceanography.

(d) Distribution and Ecology of Plants and Animals.

(e) Distribution of Man.

(f) Economic Geography.

(g) The Political Geography of the Modern World.

(h) Historical Geography.

(i) History of Geographical Knowledge.

Questions will be set at the examination involving (1) the translation of passages in French and German, and (2) answers with regard to the subject-matter thereof. A candidate will be required to answer that question which is in agreement with his choice of a special region (France or Germany). Without answering this question a candidate cannot make up the full number of questions to be answered.

Candidates are required to submit their *original* note-books and other evidence of work in the field, for inspection by the examiners. Candidates (except those entering at overseas centres) will be instructed on the examination programme sent with their entry-form as to the time and place for delivery of their note-books and field work.

1. GENERAL REGIONAL GEOGRAPHY

The present conditions, the inter-relations and the evolution of the various physical, human and other biological elements in the geography of each area. A synthetic study of the natural regions and their subdivisions, with an examination of their characteristics and an evaluation of the relative influence of their component elements.

In the paper on the British Isles, applications of practical methods to regional work will be demanded. Candidates may be required (a) to interpret and to discuss the value and use of the various maps, e.g., those issued by the Ordnance Survey, (b) to interpret geological maps, to draw sections across these, and to examine the influence of the geological structure upon other geographical conditions, (c) to interpret, and to construct from data supplied, weather and climate charts and graphs, and to relate the facts indicated to such matters as relief, economic activities, etc., (d) to make and to discuss maps and other graphic means of indicating human conditions, e.g., agricultural production, pastoral work, mining, communications, and distribution of population.

In the paper on the country selected under (ii) candidates will be expected to show a knowledge of some of the principal regional studies in the language of the country selected, and to translate and comment upon passages from such works. Application of practical methods as indicated in connexion with the paper on the British Isles may be demanded, and familiarity with the topographical maps issued by the Government of the country will be assumed.

2. PHYSICAL BASIS OF GEOGRAPHY

A broad knowledge of the physical geography of the world to serve as a basis for the study of regional geography.

The Earth as a Planet. Its movements and relation to the Sun ; the consequent distribution and seasonal variation of insolation over the earth's surface.

The Atmosphere. Distribution and periodic variation of the pressure and temperature of the air, of air movements and wind systems, of humidity and precipitation ; climate types and regions.

The Oceans. Form of sea- and ocean-beds. Temperature and salinity of oceans and seas ; wave and tidal movements and their effects ; ocean circulation, its origin and effects.

The Lands. General classification of the materials of the earth's crust—sedimentary, igneous, and metamorphic rocks ; crustal movements—folding and faulting isostasy ; processes of denudation and deposition ; chief effects of glaciation ; typical land-forms ; soils ; physical controls of Water Supply.

3. MAP WORK

The study and interpretation of topographical maps of the principal countries. Methods of showing relief and other features. Scales and their transformations.

Simple methods of survey, including the use of the chain, the plane-table, prismatic compass, clinometer, and theodolite.

The collection of data relating to climatic, economic and population conditions and cartographical and diagrammatic methods of expression of such data.

The principles of the following map projections, namely :—Conical with one or two standard parallels, Bonne, polyconic, international, conical equal area and conical orthomorphic ; sinusoidal, Mollweide, Mercator ; zenithal equidistant, zenithal equal area, and zenithal orthomorphic or stereographic.

Candidates are expected to know the principle underlying each projection, its defects, and its suitability for particular purposes or areas. They should be able to construct any projection by simple graphical methods where possible, or by simple tables, and they should be able to identify each projection so far as possible by inspection or rough measurement.

(4) (a). CARTOGRAPHY

Methods of Trigonometrical Surveying, including Triangulation, Resection and Traversing. Photographic Surveying. Heights by Levelling and by Aneroid Barometer. The use of the Sextant.

Time—mean, apparent, and sidereal. International Date Line. Determination of Latitude, Longitude and Azimuth by simple astronomical observations. The elements of Spherical Trigonometry so far as is required for the above. Differences of Latitude, Longitude and Reverse Azimuths. Calculation of the times of Sunrise and Sunset.

Historical statement of the more important efforts to determine the figure of the Earth with the results arrived at and the principles of the methods.

A further study of the Map Projections included in the obligatory subject "Map Work" together with Cassini's Transverse Mercator, Gnomonic, Aitoff's, Transverse and Oblique Zenithal Projections. The effect of the spheroidal shape of the Earth on Map Projections in simple cases.

A knowledge of elementary plane trigonometry will be assumed.

4 (b). GEOMORPHOLOGY

The Earth : its nature and physical state, with the evidence bearing thereon.

The major relief features of the lithosphere ; their origin, development and distribution.

Land Forms : the study of their characteristics and origin, with special reference to definite areas. A knowledge of the leading type areas will be assumed. In answering, candidates will be expected to substantiate their general statement by examples drawn from areas which they have specifically studied.

4 (c) CLIMATOLOGY AND OCEANOGRAPHY

A study of the atmosphere and hydrosphere, including a more detailed knowledge of the matter specified in the syllabus on the Physical Basis of Geography (sections on the Atmosphere and the Oceans).

The construction and use of the chief meteorological instruments.

The thermal structure of the atmosphere and the principles of its circulation.

Classification of climates. Climatic control of soil-types and of the régime of rivers. Periodic and secular variations of climate.

The history and methods of oceanographical survey. Marine deposits.

Physical properties of ocean waters and their circulation. Composition of river, lake and ocean waters. The characteristics and causation of the tides.

4 (d). DISTRIBUTION AND ECOLOGY OF PLANTS AND ANIMALS

Candidates taking the special option **Distribution and Ecology of Plants and Animals** will be assumed to have an elementary knowledge of Biology such as is indicated by a pass in one or more of the subjects Botany, Zoology or Biology in the Intermediate or other examination of equivalent grade.

I. *Distribution and Ecology of Plants*

1. The habitat factors : climatic, topographic, edaphic and biotic (including the influence of man).

2. The structure and physiognomy of plant communities. General principles of taxonomic distribution, including the principal geographical elements in the British flora. Distribution, dispersal and endemics.

3. Types of plant communities. Climax communities and successional series. Woodland, grassland, transitional and desert communities : their distribution and characteristics.

4. Plant communities of the British Isles.

II. *Distribution and Ecology of Animals*

5. An elementary knowledge of zoological classification.

6. The zoogeographical regions and the way in which the existing faunas, with special reference to mammals, have arisen by development *in situ*, migration and extinction.

7. The subdivisions of the great zoogeographical regions and faunas. The seasonal changes of the faunas and their correlation with the plant communities.

8. The aquatic environment, as illustrating the principles governing the relations between animals and their surroundings.

(a) The sea ; the elementary facts of the physics and chemistry of the sea so far as they bear on living things. Food chains, including the nitrogen cycle.

(b) Fresh waters and their difference from the sea, particularly with regard to seasonal changes.

(c) The distribution of animals in the sea : Littoral, pelagic and abyssal faunas.

4 (e). DISTRIBUTION OF MAN

I. The chief human races, prehistoric and modern. Some knowledge of their distribution and biological characters.

II. Distribution of Population in the Modern World, with special reference to :—

1. Density and arrangement of Population.

2. Proportions of rural and urban populations.

3. Distribution of the more important modern languages.

4. Modern Migrations of Population.

4 (f). ECONOMIC GEOGRAPHY

I. A study of the influence of :—

(1) Physical conditions and

(2) Human, including economic, conditions on :—

(a) The production of raw materials and food-stuffs.

(b) The distribution of manufacturing industries.

- (c) The development of power resources.
- (d) The organization of commerce and transport.
- (e) The great trade routes.

II. A study of Europe, *or* N. America, *or* Asia, with reference to the localization of industries and trade and the relation of these to the physical environment and the life of the inhabitants.

4 (g). THE POLITICAL GEOGRAPHY OF THE MODERN WORLD

I. The State in its geographical relations. The location, extent and resources of its territory ; communications, frontiers, capital cities and metropolitan districts.

II. Relations of political to ethnic and linguistic units.

III. Political Geography of "Backward" regions—dependencies, protectorates, mandated territories.

4 (h). HISTORICAL GEOGRAPHY

I. A general study of the inter-relation between man and his physical environment in historic time. (To be illustrated by specific instances. The instances may be selected anywhere in the geographical field, but adequate evidence should be available in regard to them.)

II. A more detailed study of the historical geography as thus defined of the first and one other of the following regions, illustrated by specific instances :—

The British Isles.
The Mediterranean Region.
Western and Central Europe.
North America.

The manner in which facts relating to the chosen region should be studied should be geographical in character, e.g., the inter-relation of relief, climate, vegetation, etc., with historical facts like changes in the distribution of population, industries, etc., at different epochs.

4 (i). HISTORY OF GEOGRAPHICAL KNOWLEDGE

Candidates will be required to show an outline knowledge of the following subjects (1–9 below), and will also be examined in a special study of *one* of them selected by the candidate. In each section special attention should be paid to the inter-relations between the discoveries and the geographical ideas of the age.

1. The growth of geographical knowledge from Herodotus to Ptolemy.

2. Geographical knowledge during the early Middle Ages down to the travels of the Polos.

3. The growth of geographical knowledge from the time of Marco Polo to the beginning of the 15th Century.

4. The Great Age of Maritime Discovery down to 1529.

5. Maritime discoveries from Magellan to Tasman.

6. Maritime discoveries from Tasman to Vancouver.

7. Modern exploration of the Americas and Australia.

8. Modern exploration of Africa and Asia.

9. Polar Exploration.

Geology

For examinations up to and including 1956 only. For details of alternative revised regulations for examinations in and after 1954, see separate pamphlet.

Candidates must satisfy the examiners (i) in the subject as set out on pages 1262/3 for the General Examination, (ii) in Section A, and (iii) in either Section B or Section C, as set out below.

Candidates must state, when applying for approval of candidature, which Section they select.

One 3-hour paper will consist of subjects for an essay.

Section A.—Physical and Stratigraphical Geology

General physical features of land areas : the relations of these features to geological structure, and their origin.

Forms of seas and ocean basins. Their origin. Nature and distribution of their deposits.

The nature, history, and distribution of the stratified rocks and their fossils in the British Isles compared with those in other parts of Europe and in the better known extra-European areas. Relations of igneous and metamorphic rocks to these stratified rocks.

The practical applications of Geology, especially water supply, coal and rocks used as building stones.

Candidates will be expected to be familiar with the general history of the development of geological science.

Section B.—Mineralogy and Petrology

The optical and other properties of the rock-forming minerals.

Structures found in rocks and their significance. Mineralogical constitution, chemical composition, and other characters of the principal varieties of rocks. Petrogenesis.

Relations of the chief types of rocks to one another.

Petrological methods. The isolation, by various means, of the minerals which form rocks ; and the principles of their determination by micro-chemical and other tests.

The more important minerals of economic value, and their mode of occurrence.

Section C.—Palaeontology

General distribution of existing faunas and floras, and their relations to those of former geological periods.

Morphological characters of the more important genera and larger groups of fossils :—(1) plants, (2) invertebrates, (3) vertebrates. The conditions which determine their distribution in present and past time.

Characteristic fossils of successive geological deposits. Zonal value of fossils.

Palaeontological methods.

Practical Work

Satisfactory evidence must be given of adequate instruction having been received by the students in the field.

Reading and interpretation of geological and other maps, and the drawing of sections across them.

Description and identification of minerals, rocks, and fossils in hand-specimens, and under the microscope.

[*Note.*—The specimens will be selected from a wider range of rocks and minerals for candidates taking Section *B*, and of fossils for candidates taking Section *C*, respectively.]

Candidates are required to bring to the practical examination their *original* note-books containing the record of their laboratory work for inspection by the examiners. Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates may bring petrological microscopes and accessories for use in the practical examination, and candidates offering Section *B* (Petrology) are recommended to do so.

Mathematics

For examinations up to and including 1954 only. For details of alternative revised regulations for examinations being held in and after 1952, see separate pamphlet.

A candidate who has taken Honours in Mathematics at the B.A. Examination is not permitted to present himself for the B.Sc. Special Examination in Mathematics. A candidate who has obtained the B.Sc. Honours Degree in Mathematics under regulations in force prior to 1923 will not be allowed to enter for either the B.Sc. Special Examination in Mathematics or for the Examination in Advanced Subjects.

The examination consists of eight papers, viz., three papers in Pure Mathematics, three papers in Applied Mathematics, and two papers containing questions in both Pure and Applied Mathematics.

The standard of the examination shall be such as can reasonably be attained in two years by a student who has already reached Intermediate standard.

The syllabus includes the Pure and Applied Mathematics of the B.Sc. General Examination (excluding practical Geometrical Drawing and Astronomy), and, in addition, the following :—

PURE MATHEMATICS

Analysis

Determinants and their use in elimination. The elementary theory of equations, including the algebraic solution of the cubic and quartic, and Sturm's theorem. Expansion of trigonometrical functions of multiple angles. Elementary spherical trigonometry, excluding the theory of the circles associated with a spherical triangle.

Limits. Mean value theorems. Taylor's theorem. Partial differentiation. Change of variables in differentiation and integration. Maxima and minima of functions of not more than two independent variables. Differentiation with regard to a parameter of an integral which has finite limits. Easy double and triple integrals.

Simple tests for the convergence of series and products. Absolutely convergent complex series. Cauchy's rule for the multiplication of two absolutely convergent series. Power series of a real variable, their uniform convergence, integration and differentiation. Binomial series (with real index), exponential and logarithmic series for complex arguments. Expansion of $\sin x$, $\cos x$, $\sinh x$, $\cosh x$, as products of quadratic factors.

Linear differential equations with constant co-efficients. Differential equations of the second order with one or both variables explicitly absent. Linear simultaneous equations with constant co-efficients. Integrable equations of the type $P dx + Q dy + R dz = 0$.

Simple cases of the integration of differential equations of the first and second order in series. Simple linear partial differential equations of the first and second orders with two independent variables.

Geometry

Point and line equations in Cartesian and homogeneous co-ordinates. Systems of conics. The methods of projective geometry, including projection, reciprocation, inversion, homography, and involution.

Properties of quadrics derived from their equations referred to principal axes. Plane sections of quadric, including circular sections. Conjugate diameters and generators of quadric. General equation of second degree; equation of tangent plane, polar plane, and tangent cone (excluding reduction to canonical form).

Simple singularities of plane curves. Asymptotes. Envelopes. Pedal and intrinsic equations of curve. Area enclosed by curve. Arc of curve. Volumes. Surface of solid of revolution. Tracing the shape of simple curves. Twisted curves (tangent, osculating plane, curvature, torsion, Serret-Frenet formulae). Tangent plane and normal to surface in rectangular Cartesian co-ordinates.

APPLIED MATHEMATICS

Statics

Reduction of a system of forces to a wrench. Conditions of equilibrium under any system of forces. Principle of virtual work. Simple cases of bending moment. Statics of inextensible chains under gravity (the problems being restricted to a plane). Stability of equilibrium in two dimensions.

Hydromechanics

Law of variation of pressure in a liquid or gas. Centres of pressure. Conditions of equilibrium and stability of floating bodies. Steady motion of rotating liquid under gravity.

Attraction and Theory of Potential

Fundamental theorems on gravitational attraction and potential, including Gauss' theorem. Laplace's and Poisson's equations in rectangular Cartesian, cylindrical, and polar co-ordinates. Simple cases of calculable attractions, potentials, and gravitational potential energy.

Kinematics

Composition and resolution of velocities and accelerations. Normal and tangential accelerations. Accelerations in ordinary systems of co-ordinates. Velocities and accelerations relative to moving rectangular axes. Kinematics of a rigid body moving in two dimensions or about a fixed point. Composition and resolution of spins.

Kinetics

Central orbits; elliptic motion and disturbed elliptic motion. Projectiles with resistance. Impulsive forces. The simple spherical pendulum. Moments of inertia. D'Alembert's principle. Applications of the principles of linear momentum, angular momentum, energy, to simple systems. Lagrange's equations with easy applications. Motion of a rigid body in two dimensions. Euler's dynamical equations. The motion of the uniaxial top.

ADVANCED SUBJECTS (*for examinations in 1954-55 only*)

An optional examination in Advanced Subjects may be taken at the same time as the B.Sc. Special Examination in Mathematics or subsequently. Successful candidates will be certified either as having satisfied the examiners or as having obtained distinction.

A candidate who takes the examination in Advanced Subjects at the same time as the Degree examination and fails to satisfy the examiners in the latter, shall have no report made upon his examination in Advanced Subjects.

Candidates will be examined in not less than two and not more than four of the groups numbered 1 to 12 below.

One paper will be set on each group and it is possible for a candidate to obtain distinction by sufficient work on two papers.

Pure Mathematics

1. Elementary theory of functions of a complex variable, including contour integration and conformal representation. The elements of Bessel functions and spherical harmonics. The elements of the theory of vectors.

(Group 1 may not be taken together with Group 4 or 6.)

2. Pure and analytical geometry of two and three dimensions including the elements of the theory of curvature of curves and surfaces and the simple properties of singularities of plane algebraic curves with methods of curve-tracing.

3. More advanced differential and integral calculus, including *Beta* and *Gamma* functions. Ordinary simultaneous, total, and partial differential equations.

4. Elementary theory of functions, including Cauchy's and Laurent's expansions. Convergence of series and products, including the theory of uniform convergence. The elements of the theory of elliptic functions.

5. Finite differences. Interpolation, mechanical quadrature. Laws of error. Combination of observations. Elementary theory of frequency and correlation.

6. Integration of linear differential equations in series. Fourier's series. Spherical harmonics, Bessel's functions ; with applications.

Applied Mathematics

7. Dynamics and theory of potential.

8. Advanced hydrostatics, including capillarity and surface tension. Elementary hydrodynamics.

9. Elementary theory of elasticity and sound.

10. Astronomy (treated from a general standpoint ; including spherical astronomy, astrophysics, and gravitational astronomy, but excluding lunar and planetary theory).

11. Optics from the point of view of instruments (mainly geometrical with some diffraction interference, and refraction through crystals).

12. Electro-magnetic theory (including relevant phenomena of light).

A candidate may, if he so desire, offer himself for examination on the B.Sc. General syllabus in Physics as a subsidiary subject, but he is not required to do so. No exemption is granted from any of the papers in Mathematics.

THE SHERBROOKE STUDENTSHIP IN MATHEMATICS

A Sherbrooke Studentship in Mathematics will be awarded on the result of either the B.A. Honours or B.Sc. Special Examination in Mathematics.

For full particulars see the Scholarships Pamphlet.

SIR JOHN WILLIAM LUBBOCK MEMORIAL PRIZE

A Sir John William Lubbock Memorial Prize in Mathematics, at present valued at £30, will be awarded to the best candidate who obtains a First Class at the B.A. Honours and at the B.Sc. Special Examinations, whether Internal or External, on the recommendation of the External examiners; provided that candidates for the External examination who, on the first day of the examination, have exceeded six calendar months' standing as students in any other University, and in such University are pursuing, or have completed, a course of study with a view to a Degree therein, shall not be eligible. Candidates sitting at Overseas Centres are not eligible.

Physics

For examinations up to and including 1956 only. For alternative revised regulations for examinations in and after 1954, see separate pamphlet.

Questions will be set involving (1) translation of French and German passages and (2) answers in regard to the subject-matter thereof. Without answering the questions set in both these languages a candidate cannot make up the full number of questions to be answered.

One 3-hour paper will consist of subjects for one or two essays at the candidate's choice.

Candidates will be required to show a general acquaintance with :—

The Principles, Methods and Theories of Physics treated mathematically and experimentally under the following main divisions :—

- (i) Properties of Matter and Sound.
- (ii) Heat and Thermodynamics.
- (iii) Light and Radiation.
- (iv) Electricity and Magnetism.

Candidates are required to bring to the practical examination their *original* note-books of their laboratory work, which may include a record of any research work in which they have participated, for inspection by the examiners. These must be duly certified by the teacher, if any, that the work is the candidates' original experimental work carried out in the laboratory, and will be taken into account in estimating their qualifications; provided only that the research work be not allowed to take the place of such sound general knowledge of Physics as should be required from a candidate for the Special Examination. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

THE GRANVILLE STUDENTSHIP IN PHYSICS

A Granville Studentship in Physics will be awarded on the result of the B.Sc. Special Examination in Physics.

For full particulars see the Scholarships Pamphlet.

Physiology

Candidates are required to satisfy the University that their proposed course of study and previous training in the subject are adequate. Each application will be considered on its merits and candidates must submit a certificate of course of study, when applying for approval of candidature.

Candidates are also required to have passed a qualifying examination consisting of the papers and practical examination

in Physiology of the B.Sc. General Examination unless they have passed one of the following examinations of this University :—

- (a) the Second Examination for Medical Degrees, *or*
- (b) the B.Pharm. Examination under the New Regulations with Pharmacology as one of their Part II subjects, *or*
- (c) Physiology at the B.Sc. General Examination, *or*
- (d) the B.Sc. (Veterinary Science) Examination.

No other exemptions from this qualifying examination will be allowed.

The qualifying examination can only be held in June, but a candidate may enter for it on the same occasion as he enters for his subsidiary subject.

The entry fee for the qualifying examination will be £2 2s.

Questions will be set involving (1) translation of French and German passages and (2) answers in regard to the subject-matter thereof. Without answering the questions set in *both* these languages a candidate cannot make up the full number of questions to be answered. The use of French and German dictionaries, provided by the University, will be permitted.

One 3-hour paper will consist of subjects for an essay.

The candidate will be expected to submit himself to any test which the examiners may think fit to impose. Choice of questions shall, however, be allowed.

Candidates are required to bring to the practical examination their *original* note-books, for inspection by the examiners, containing the record of their laboratory work, which may include a record of any research work in which they have participated. These must be duly certified by the teacher, if any, that the work is the candidates' original experimental work carried out in the laboratory and will be taken into account in estimating their qualifications ; provided only that the research work be not allowed to take the place of such sound general knowledge of Physiology as should be required from a candidate taking the Special Degree. Candidates not in attendance at a teaching institution must include in their note-books a statement as to how they carried out their practical work.

Psychology

For examinations up to and including 1955 only. For details of alternative revised regulations for examinations in and after 1952, see separate pamphlet.

Questions will be set involving (1) translation of French and German passages and (2) answers in regard to the subject-matter thereof. Without answering the questions set in *one* of these languages a candidate cannot make up the full number of questions to be answered. Additional credit is not obtainable for a knowledge of more than one language.

Candidates shall be examined in the subjects of the General Examination (*see* p. 1269/70) carried to a higher stage, and must show a knowledge of current controversies.

The scheme of the examination will be as follows :—

Two papers on General Psychology.

One paper on History of Modern Philosophy (Descartes to Kant).

One paper on Comparative and Abnormal Psychology.

One paper on the Physiology of the Nervous System and Sense Organs.

One paper on Experimental Psychology.

Two day's practical examination.

[One of the two papers on General Psychology will consist of subjects for one or two essays at the candidate's choice.]

Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Statistics

For examinations up to and including 1955 only. For details of alternative revised regulations for examinations in and after 1953, see separate pamphlet.

Candidates whose course of study or training has been specially approved by the Council for External Students may be admitted to the B.Sc. (Special) Examination in Statistics. Each application for admission to the examination will be considered individually and candidates must submit, when applying for approval of candidature, a detailed statement of their proposed course of study and their previous training and experience (and/or their prospective training and experience up to the date of the examination). Such a statement should include a description of any applied statistical work they have carried out or propose to carry out privately, copies of any non-confidential reports they have prepared or statements from employers describing the scope and content of their practical experience. Candidates should bear in mind that a practical test involving applications to data of the statistical techniques outlined in the syllabus is an essential part of the examination and that ability to use the common mechanical calculators—multiplying and adding machines—would be assumed by the examiners.

Questions will be set involving (1) translation of passages in French and German and (2) answers in regard to the subject-matter thereof. Without answering the question in *one* of these languages a candidate cannot make up the full number of questions to be answered.

The examination will consist of :—

Six papers on Section A.

Two papers on Section B.

Two days' practical examination on Section A.

SECTION A

The subjects of the Internal B.Sc. (General) Examination in Statistics carried to a more advanced stage, dealing in particular with the following :—

The fuller mathematical theory of probability and the ideas underlying the processes of statistical inference. The development of systems of frequency distribution. The theory associated with tests of significance of differences, particularly in sampling from normal

populations. Multiple regression and the more advanced theory of correlation. The elementary treatment of time series, including the theory of periodicity.

[The syllabus for the Internal B.Sc. General in Statistics is as follows :—

Elements of the mathematical theory of probability. Independent and dependent probability, general ideas as to association, contingency, and correlation. Discrete and continuous variates. Simple interpolation, extrapolation, and graduation. Elementary treatment of frequency curves ; the normal curve of error and the probability-integral table. Method of least squares, method of moments, theory and practice of curve fitting and tests of goodness of fit. Probable errors of statistical constants. Theory and practice of sampling. Tests of significance of differences in populations. Theory of grades and ranks. General theory of correlation of two and three variables, including the nature and use of coefficients of partial correlation.

Preparation and discussion of data, schedules of inquiry for various forms of statistical investigations, tabulation, and handling of records. Classification by measurement and by broad categories. Graphic representation of statistical data in the case of one of two variates.

Application of statistical methods to scientific problems, such as suggested in the following list :—

Biology.—Measurements on lower animals and plants, to illustrate and test theories of selection, evolution, and heredity.

Anthropology.—Cranimetry, measurements of school children, general anthropometry.

Sociology.—Official vital statistics ; birth, death, and marriage rates, and their standardization ; estimates of intercensal and post censal populations ; principles of construction of life, morbidity and invalidity tables ; Eugenics ; differential fertility ; health and disease ; housing and environment.

Psychology.—Variability of mental characters, and their correlation with each other, with physical characters, and with environment ; personal equation ; correlation of judgments.

Economics.—Index numbers ; frequency curves of incomes and of wages ; correlation of economic phenomena.

Practical Work

The practical examination will involve tabulation, the use of the customary statistical tables, exercises in practical calculation and the use of the commoner calculating machines ; the determination and plotting against observation of the simpler frequency distributions and of regression lines. Measurement of material may be required, and note-books of practical work will be examined.

SECTION B

The subjects of the B.Sc. (General) Examination in Pure Mathematics (see p. 1264), excluding Euclidean methods, together with an elementary treatment of determinants of any order. Taylor's expansion for functions of several variables and maxima and minima of such functions. Jacobians and their applications to multiple integrals ; finite differences with applications to interpolation, summation and integration ; gamma, beta, and hyper geometric functions. Stirling's expansion.

Note-books of actual laboratory work on biological, anthropological, sociological, psychological or economic problems will be examined,

and experimental work in observing and recording as well as in reduction will be demanded.

Candidates are permitted to bring for use at the practical examination any book or note-books they wish.

Zoology

One 3-hour paper will consist of subjects for an essay.

The examination shall include :—

(1) The subject as set out for the B.Sc. (General) Degree (*see* pp. 1271/2, with more detailed treatment of sections (b) to (g) of that syllabus.

(2) *One* of the following sections : *a, b, c, d, e, f* or *g* as set out below.

Candidates must give notice, when applying for approval of candidature, which section they select.

(a) General and Comparative Physiology :—Elementary Physics and Chemistry as applied to biological systems. General physiology of the cell. Action of physical and chemical influences on the cell. Comparative physiology of digestion, respiration, excretion, circulation of body fluids. Animal behaviour—sense organs, effectors, nervous and endocrine co-ordination.

(b) General Entomology :—A general study of the external and internal anatomy, post-embryonic development and biology of insects ; natural orders ; origin and phylogeny of insects ; origin and development of the wings in insects ; aquatic life in insects ; social life in insects ; insect nutrition ; physiology of respiration in insects.

(c) Parasitology :—Symbiosis and Parasitism. Effect of parasitism on structure and life history of the parasite and host. A detailed study of parasitism as exhibited by (a) Protozoa, (b) Platyhelminthes and Nematelminthes.

(d) General Embryology :—Germ cells ; their origin, structure and maturation ; fertilization ; cleavage ; gastrulation, formation of germinal layers and the factors which control them. Formation and growth of embryo. Outlines of organogenesis in the Vertebrate embryo. Development of the foetal membranes in the Amniota. Placentation.

(e) Genetics :—Nature and nurture as influencing variation. Mendelian inheritance, sex-linked inheritance. Chromosomes and genetics. Comparative genetics of different animal groups. Genetics of population. Elementary statistical theory. Species crosses. Practical work in genetics of the mouse or *Drosophila*.

(f) Marine Ecology :—The life of the seas. The work of the great oceanographical expeditions. The physical and chemical environment and its seasonal changes. Littoral communities, and the benthos, necton, and plankton. Methods of plankton research. The basis of the food supplies of the sea. Putter's theory. The place of the plankton in the economy of marine life : the principal types of plankton, their distribution, seasonal changes, vertical migrations and patchiness. The relation of animal and plant planktons.

Adaptations of animals to pelagic and deep-sea life, including bioluminescence. Studies from original papers on the natural history of the herring, the plaice and the rorquals. Practical work on the ecology of the marine plankton, involving a consideration of physical and chemical factors and accompanied by a grounding in taxonomy.

(g) Limnology :—Peculiarities and origin of freshwater faunas. Barriers and means of dispersal. Migrations between fresh waters and the sea. Relict faunas. Physical and Chemical factors in the environment. Inter-relations of animals and of flora and fauna. Plankton. Lakes, ponds, rivers, estuaries, waters which dry up periodically, underground, thermal and saline waters. Respiratory Physiology. Osmo regulation. Animal behaviour in relation to mode of life. Studies of aquatic environments. Economic applications.

The syllabus under (1) and (2) above will form the basis for the practical examination. Candidates may be required at the practical examination to deal with types other than those mentioned in the syllabus.

Candidates are required to bring to the practical examination their *original* note-books containing the record of their laboratory work, which may include a record of any research work in which they have participated, for inspection by the examiners. These must be duly certified by the teacher, if any, and will be taken into account in estimating their qualifications ; provided only that the research work be not allowed to take the place of such sound general knowledge of Zoology as should be required from a candidate taking the Special Degree.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

MASTER OF SCIENCE, DOCTOR OF PHILOSOPHY AND DOCTOR OF SCIENCE

Regulations relating to Higher Degrees in Science (M.Sc., Ph.D. and D.Sc.), are contained in separate pamphlets which may be obtained on application to the External Registrar.

UNIVERSITY OF LONDON



REVISED REGULATIONS FOR THE B.Sc. SPECIAL EXAMINATION For External Students

[Note : These are alternative to the Old Regulations published in the pamphlet " B.Sc. Final Examinations (General and Special) for External Students."]

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

1. Candidates for the B.Sc. Special Degree as External Students are required to satisfy the minimum University and Faculty entrance requirements, to have been registered as External Students for the B.Sc. Special Examination, to have obtained the necessary qualifications for admission, and to pass the Final Examination or Examinations and such examinations in Ancillary subjects and translation from foreign languages as may be prescribed in each case.

2. The curriculum for the B.Sc. Special degree for External Students has been revised and the standard of the Final examinations is now such as can reasonably be expected from a student who has already obtained the required preliminary qualification after a course of study extending over not less than three years. Revised regulations for subjects other than Botany, Chemistry, Mathematics, Geography, Geology, Physics, Psychology, and Statistics will be published in due course.

3. For the present the revised regulations will be *alternative* to those under the old regulations and the latter will remain in force until the dates specified therein.

FACULTY REQUIREMENTS

A candidate who has satisfied the minimum University entrance requirements by means of a General Certificate of Education on and after 1 May 1951 will be required to have passed in Mathematics at Ordinary or Advanced Level at that examination or an accepted equivalent.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the B.Sc. Special degree under the Revised Regulations each candidate must :—

- (a) have satisfied the minimum University and Faculty entrance requirements ;
- (b) have been registered as an External Student proceeding to the B.Sc. Special degree at least three academic years previously ;
- (c) have qualified in the appropriate subjects for admission as indicated for each main subject by

either (i) having passed the Intermediate Examination in Science with these subjects and/or some other examination of this University in the equivalent subjects

or (ii) having obtained a Certificate or Certificates awarded on a Higher School Examination approved by the Ministry of Education as an approved second examination in secondary schools with the equivalent subjects at main subject standard

(Candidates who have not qualified for the award of a Higher School Certificate but who have been permitted to count successes gained in 1949 and 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirement may also count either or both of these subjects, where appropriate, towards the admission requirements.)

or (iii) having obtained a General Certificate or Certificates of Education awarded by one of the approved University examining bodies with passes in the equivalent subjects at Advanced Level.

- (d) have obtained approval of candidature for the degree.

2. A candidate who holds qualifications gained under (c) (ii) or (c) (iii) which do not comply with these requirements as to subjects passed may complete his qualification by passing in the remaining subject or subjects necessary at the Intermediate Examination in Science provided that he has already satisfied the minimum University and Faculty entrance requirements. The regulations for this examination should be consulted.

3. All candidates will be required to have completed the qualifications for admission at least three academic years before entry to the last part of the Final examination.

4. Where under Qualification 1 (c) one or more Science subjects (unspecified) are required, selection must be made from the following :— Pure Mathematics, Applied Mathematics, Mathematics (Pure and Applied), Physics, Chemistry, Biology, Botany, Geography, Geology, Physiology, Zoology, or approved equivalents, but Mathematics (Pure and Applied) may not be counted with Pure Mathematics or with Applied Mathematics and Biology may not be counted with Botany or Zoology.

DATE OF EXAMINATION

The examinations for the B.Sc. Special degree shall take place once in each year, and shall commence on the first Thursday after 3 June.

APPROVAL OF CANDIDATURE

Each candidate will be required to apply for approval of candidature for the whole examination including (where prescribed) the translation test and the ancillary subjects before he is admitted to any of these examinations. He will be required in his application to state (except in Mathematics) the ancillary subjects he proposes to offer and his proposed dates of entry for each of the examinations he is required to pass for admission to the degree.

A candidate should normally apply for approval of candidature during the period October-December in the year next but two preceding that in which he proposes to enter for the final part of the examination and not later than 7 December of that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 7 December, applications may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 28 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate lists will be opened on 17 January. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be dispatched by post from the University after 21 February, and the candidate lists will be closed on 28 February.

No entry can be accepted after the candidate lists have been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Entry fees are as follows :—

	£	s.	d.
Language test, as required, each entry (whether for 1 or 2 languages)		10	6
Ancillary Subjects, each	2	2	0
Final Examination in Chemistry, each Part ..	3	13	6
Final Examination in Botany, Geology, Psychology or Statistics, each Part	4	14	6
Final Examination in Physics, each Part	5	15	6
Final Examination in Geography	9	9	0
Final Examination in Mathematics	13	13	0

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for a Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. A candidate who is exempted from the examination in any ancillary subject will be required on his first entry for a remaining ancillary subject or for Part I or Part II of the examination to pay the normal entry fees prescribed for those examinations from which he is exempted in addition to the entry fee for the examination for which he is entering.

3. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

4. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

Candidates for the B.Sc. Special Degree under the Revised Regulations may select any one of the following Special Subjects, and must satisfy the examiners in all the examinations specified unless they have been granted exemption in any particular case :—

Botany

- (i) An examination in Ancillary subjects in :—
 - (a) any *one* of the subjects **Chemistry, Geology, Physics, Physiology, Statistics, Zoology.**
 - (b) a *second* subject selected from the list in (a) above.
- (ii) Part I of the Final Examination in **Botany.**
- (iii) Part II of the Final Examination in **Botany.**

Chemistry

- (i) A written test on translation into English of scientific texts in German.
- (ii) An examination in Ancillary subjects in :—
 - (a) Any *one* of the subjects **Biology or Physiology or Geology.**
 - (b) **Mathematics.**
 - (c) **Physics.**

- (iii) Part I of the Final Examination in **Chemistry**.
- (iv) Part II of the Final Examination in **Chemistry**.

Geography

- (i) An examination in Ancillary subjects in :—
 - (a) Any *one* of the subjects **Anthropology, Biology, Botany, Economics, Geology, Mathematics, Physics, Statistics**.
 - (b) A *second* subject selected from the list in (a) above with the addition of **History**.

Candidates must select **Geology** as one of their ancillary subjects.

- (ii) The Final Examination in **Geography**.

Geology

- (i) An examination in Ancillary subjects in :—
 - (a) Any *one* of the subjects **Physics, Chemistry, Biology, Botany, Zoology, Mathematics, Geography, Anthropology**.
 - (b) A *second* subject selected from the list in (a) above.

Any pair of subjects may be chosen provided that **Biology** is not taken with **Botany** or **Zoology** and that one subject is selected from the first five.

- (ii) Part I of the Final Examination in **Geology**.
- (iii) Part II of the Final Examination in **Geology**.

Mathematics

The Final Examination in **Mathematics**.

Physics

- (i) A written test on translation into English of scientific texts in *two* of the following languages : French, German, Russian.
- (ii) An examination in Ancillary **Mathematics**.
- (iii) Part I of the Final Examination in **Physics**.
- (iv) Part II of the Final Examination in **Physics**.

Psychology

- (i) A written test on translation into English of scientific texts in *either* French *or* German.
- (ii) An examination in Ancillary subjects in :—
 - (a) Any *one* of the subjects **Anthropology, Biology, Chemistry, Economics, Mathematics, Physics, Physiology, Sociology, Statistics, Zoology**.
 - (b) A *second* subject selected from the list in (a) above.

Any pair of subjects may be chosen provided that **Biology** is not taken with **Physiology** or **Zoology**.

- (iii) Part I of the Final Examination in **Psychology**.
- (iv) Part II of the Final Examination in **Psychology**.

Statistics

- (i) A written test on translation into English of scientific texts in *either* French *or* German.
- (ii) An examination in an Ancillary subject selected from the following list : **Biology, Chemistry, Physics, Physiology, Zoology**.
- (iii) An examination in Ancillary **Mathematics**.
- (iv) Part I of the Final Examination in **Statistics**.
- (v) Part II of the Final Examination in **Statistics**.

[See below for detailed Regulations governing the Scheme of Examination and Syllabuses for each Special Subject and for Ancillary Subjects.]

TIME TABLE

The examinations shall be conducted in the order shown on the timetable, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 14 August the External Registrar shall publish a list of the candidates successful at the Examination for the B.Sc. Special degree.

The list of successful candidates at the Final examination will be divided into First Class Honours, Second Class Honours and Pass. Where the Final Examination is divided into two Parts, the Class will be determined according to the performance of the candidate in both, as well as in any Ancillary Subjects which are prescribed. No Class of Honours will be awarded on Part I of the examination only. In the B.Sc. Special examinations in Botany, Geology, Geography, Physics and Psychology the Second Class Honours list will be further subdivided into an Upper and Lower Division.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) The following candidates are eligible to apply for an Aegrotat Degree :—

Candidates at the B.Sc. Special Examination under the Revised Regulations, who at the end of their course complete a substantial part of the final portion of the examination in the principal subject, provided that they have satisfied all other conditions, including the preparation of reports prescribed for the award of the B.Sc. Special Degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. The Degree will be conferred after the candidate has passed all the examinations listed in the Scheme of Examination.

3. A diploma for the Degree of B.Sc. under the seal of the University shall be delivered to each successful candidate.

4. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

MASTER OF SCIENCE, DOCTOR OF PHILOSOPHY, AND DOCTOR OF SCIENCE

Regulations relating to Higher Degrees in Science (M.Sc., Ph.D., and D.Sc.) are contained in separate pamphlets which may be obtained on application to the External Registrar.

BOTANY

[NOTE.—*The examinations for one-year Ancillary subjects will be held for the first time in 1954 ; those for two-year Ancillary subjects and Part I of the Final Examination will be held for the first time in 1955 ; and Part II of the Final Examination will be held for the first time in 1956. Examinations under the Old Regulations will be held up to and including 1956.*]

Candidates for the B.Sc. Special Examination in Botany under the Revised Regulations must have satisfied requirements (a), (b) and (d) under the general heading "Qualifications for Admission" (p. 1302) and under requirement (c) must have passed in three science subjects.

Candidates for the Degree must satisfy the Examiners in the following examinations :—

(i) An examination in Ancillary subjects in :—

(a) any *one* of the subjects **Chemistry, Geology, Physics, Physiology, Statistics, Zoology**, which should normally be taken at the end of the first year of the degree course.

(b) a *second* subject selected from the list in (a) above, which would normally be taken at the end of the second year of the degree course.

The standard expected in these ancillary subjects will be that normally attained by a full-time student after courses of one and two years respectively.

(ii) **Part I** of the Final Examination in Botany, to be taken not earlier than two years after completion of the preliminary qualification.

(iii) **Part II** of the Final Examination in Botany, to be taken not earlier than one year after the candidate has (a) passed the examination in the one-year ancillary subject ; (b) passed or been referred in the two-year ancillary subject and (c) passed Part I of the Final Examination.

A candidate who fails to satisfy the examiners in the two-year ancillary examination may, if his failure is not serious, be "referred" and be permitted to re-enter for examination in that subject at the same time as he enters for Part II of the Final Examination, provided that he is otherwise qualified. A candidate who fails to reach the standard required for reference will not be permitted to enter for Part II until he has passed or been referred in the two-year ancillary subject.

A candidate who enters for both ancillary subjects on the same occasion, or for one or both ancillary subjects with Part I of the Final Examination will be credited with any subject(s) or Part in which he satisfies the examiners.

A candidate who has been "referred" in the two-year ancillary subject and enters for it concurrently with Part II of the Final Examination will be credited with either of the examinations in which he passes.

All answers to examination questions shall be written in English unless instructions are given to the contrary.

EXEMPTIONS

1. A student who has obtained a B.Sc. (General) Degree will be exempted from the examinations in those ancillary subjects in which he has passed at the General Degree Examination and from the examination for Part I if he has passed in Botany at the General Degree Examination.

2. A student who has obtained the B.Sc. (Special) Degree in Chemistry, Geology, Physics, Physiology, Statistics or Zoology will be exempted from the corresponding two-year Ancillary Subject. If he has taken another subject from the above list as a Subsidiary or Ancillary Subject he will also be exempted the examination in the corresponding one-year Ancillary Subject.

3. A student who has obtained the B.Sc. (Special) Degree in any other subject with one of the above subjects as a subsidiary or ancillary subject may apply for exemption from the one or two-year Ancillary Subject.

4. A student who has obtained the B.Sc. (Special) Degree under the old Regulations with Botany as a Subsidiary Subject may apply for exemption from Part I of the Final Examination.

5. Candidates who are exempt from examination in both the Ancillary Subjects or in Part I of the Final may apply for permission to Complete the examinations necessary for the award of the B.Sc. Special Degree in Botany after a further interval of two academic years. Candidates who are exempt from examination in both Ancillary Subjects and from Part I will be admitted to Part II after a further interval of one academic year.

SYLLABUSES

The Special degree in Botany requires a good training in modern laboratory and field techniques and in experimental methods. The necessary training in practical plant physiology and biochemistry requires specialized laboratory equipment. There must also be a knowledge of and experience in the use of pure culture techniques and other mycological procedures. Experience of high power microscopy, including the use of oil-immersion lenses, is essential. In addition the candidate must have a knowledge of practical genetical methods and modern statistical applications. Field training in plant ecology should include the use of apparatus and of statistical methods in plant ecology.

Final Examination in Botany Part I

There shall be two 3-hour written papers and two practical examinations, each of three hours, equivalent in standard and scope to the papers in Botany at the present B.Sc. (General) Examination, the syllabus for which is as follows :—

- (1) The morphology and anatomy of plants.
- (2) A general introduction to plant physiology and biochemistry.
- (3) Plant ecology, and elementary soil science.
- (4) Elementary cytology and genetics, and the problems of evolution.
- (5) The features of special importance of the following groups,

- including some fossil forms :—Algae, Bryophyta, Pteridophyta, Spermatophyta ; Fungi, including Bacteria.
- (6) An elementary knowledge of the origin and history of the British Flora.

Practical Work

The practical examination will include :—

- (1) The description and examination, microscopical or otherwise, of any plants or parts of plants.
- (2) The reference to their appropriate systematic positions of plants or parts of plants.
- (3) Simple practical exercises in plant physiology.

In the written papers there shall be a reasonable but not extensive choice of questions, and the latter shall be so distributed as to require an adequate all-round theoretical knowledge of the subject.

The practical examination shall be designed to test all-round practical knowledge of the subject. Candidates shall be required to satisfy the Examiners in the practical examination.

Final Examination in Botany Part II

There shall be five 3-hour written papers and three practical examinations, two of six hours and one of three hours.

Candidates shall, in addition, submit a report not exceeding 5,000 words as evidence of personal study of living plants, and dealing with a subject in general biology, ecology, pathology, physiology or taxonomy. [Further details of the Syllabus to be published later.]

The examiners both in Part I and in Part II of the Examination shall be at liberty to test any candidate by means of oral questions.

Chemistry (One-Year) Ancillary to Botany

General Chemistry

Faraday's laws of electrolysis, Helmholtz's views on the nature of electricity and experiments on discharges in gases, leading to discovery of the electron. Mass and charge of the electron. Radioactivity. The nuclear atom. Radioactive displacement law and van den Broeck's hypothesis. Isotopes. Artificial radioactivity. Uses of isotopic indicators. Stable electron groups in atoms, ions and molecules. Electrovalency and covalency. Valency and the periodic classification.

Elementary kinetic theory of ideal gases. The gas equation. Distribution of kinetic and potential energy (without proof). Real gases. Molecular nature of gases. Intermolecular energy. Liquid-gas equilibrium from the kinetic standpoint. Molecular and ionic nature of crystalline solids. Crystallinity in artificial and natural materials of high molecular weight.

Adsorption on surfaces. Main general properties of colloids with particular reference to lyophilic colloids and including colloidal electrolytes. Ultrafiltration. Sedimentation. Semi-permeable membranes : osmotic pressure (phenomenological treatment). Electrokinetic phenomena.

Chemical equilibrium and the law of mass action (empirical treatment).

Electrolytic conduction. Faraday's laws. Specific, molar and equivalent conductance. Mobilities. Ionic conductance. Degree of

dissociation. Ostwald's law and departures therefrom. Strong and weak electrolytes. Transport phenomena.

Electromotive force of cells and electrode potentials (empirical treatment). Hydrogen electrode : pH (and its determination). Indicators. Buffers. Oxidation-reduction cells, potentials, and equilibria.

Organic Chemistry

Optical isomerism as illustrated by lactic and tartaric acids. Geometrical isomerism as illustrated by maleic and fumaric acids.

Tautomerism illustrated especially by ethyl acetoacetate.

Aliphatic monohydric alcohols, aldehydes, ketones, mono-carboxylic acids (esters and amides), polyhydric alcohols, hydroxyaldehydes, hydroxy-ketones including carbo-hydrates treated in outline, hydroxy-acids, aldehydic and ketonic acids, polybasic acids, amines, amino-acids, peptides, and simple olefinic hydro-carbons, alcohols and acids, with inclusion as far as possible of substances of biological importance : their sources or modes of preparation, their properties and reactions, especially general reactions, and their detection and estimation in selected examples.

Practical Work

Volumetric analysis. Standardisation of apparatus and weights. Acidimetry, alkalimetry and iodometry applied specially to determination of saponification values, iodine numbers, acetyl groups and nitrogen by Kjeldahl. Determination of Ca by permanganate.

Gravimetric analysis applied to determination of sulphate and chloride.

Simple organic chemical manipulation involving crystallisation, distillation and extraction, as shown for example in the preparation of ethyl acetate, methyl iodide, acetone semi-carbazone or dinitrophenyl-hydrazone, acetamide, carbamide, caffeine glucosazone, aniline, acetanilide, benzyl alcohol and benzoic acid. Use of the polarimeter and refractometer.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge ; Centrifuge tubes ; water bath with cover pierced to take centrifuge tubes ; two long dropping pipettes ; micro burners ; wash bottles 100 cc. polythene squeezing type ; crucibles 25 mm. and 15 mm. ; spotting tiles (porcelain) and microscope slides ; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in. and block to hold these and centrifuge tubes ; rack for dropping pipettes ; long thin spatula ; Whatman papers (No. 120), 2 in. squares ; small porcelain dish ; forceps and tube holders ; anti-bumping tubes to fit in centrifuge tubes ; small conical flask 10 ml. ; pyrex tube fitted for testing evolved gases ; reagents ; strong acids in Jena T.K. bottles ; other common reagents in bottles fitted with dropping pipettes.

Chemistry (Two-Year) Ancillary to Botany

General Chemistry

Thermodynamic concepts. H and U as functions of state. First Law. Thermochemistry. Hess's Law.

Second Law. Reversibility, irreversibility and equilibrium. Carnot's cycle. S, A and G defined : dS, dA and dG in reversible and irreversible changes. Criteria of equilibrium.

Phase equilibria in one component system.

Ideal solutions. Raoult's law phenomena. Molecular weights from vapour pressure depression, freezing point depression and boiling point elevation. Osmotic pressure phenomena (not the mechanism of osmosis): molecular weights of large molecules by osmotic pressure.

Systems of many components. Chemical potential. Equilibrium and chemical potential. Homogeneous gas equilibria. Homogeneous equilibria, including ionic equilibria, in solution. Heterogeneous equilibria.

Kinetic order of a homogeneous chemical reaction ; distinction from molecularity. The rate constant : its dependence on temperature. The idea of activation. Homogeneous catalysis and illustrations of the modes of action of catalysts. Heterogeneous catalysis (descriptive). Elementary photochemistry. Absorption spectra.

Organic Chemistry

Classification, structure, optical isomerism, reactions, methods of detection and estimation of more important carbo-hydrates.

Determination of configuration of pentoses and hexoses.

A more extended treatment of unsaturation including diolefins such as butadiene and isoprene and consideration of the conjugated systems. $—C=C—C=C—$ and $—C=C—C=O$.

Polymerization and polycondensation. Properties of macro-molecules linear and cross linked.

Benzene and its monosubstitution products containing the groups $—CH_3$, $—Cl$, $—NO_2$, $—NH_2$, $—N_2Cl$, $—NH.NH_2$, $—OH$, $—OMe$, $—CN$, $—CH_2Cl$, $—CH_2OH$, $—CHO$, $—COOH$, $—COCH_3$, $—CH:CH.CO_2H$, their preparation properties and general reactions.

Laws of substitution (experimental facts only). Disubstitution compounds, *m*-dinitrobenzene, nitranilines, diamines, dihydric phenols, quinones, hydroxy-acids. Pyridine, methyl, hydroxy and amino pyridines, nicotinic acid, piperidine. Pyrrole Purine and its relation to uric acid, xanthine, guanine and adenine.

Practical Work

Identification of elements and groups in organic compounds. Identification of simple alcohols, aldehydes, ketones, acids, primary amines, phenols, carbamide, glucose, sucrose, maltose, lactose and starch.

Simple experiments in physical chemistry such as the determination of molecular weights, determination of pH, titration curves, determination of simple reaction velocities.

Measurement of surface pressure with the Adam trough. Determination of iso-electric point.

Candidates are required to bring to the practical examinations for both First Year and Second Year Ancillary examinations their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental

work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates must provide themselves with Platinum wire and foil and further may bring into the examination room, for use in the examination, prepared crucibles with a note of their approximate weight. No other chemical apparatus may be introduced into the examination room.

Candidates may use their laboratory note-books and any other books during the practical examinations.

The same facilities for Semi-Micro Analysis will be available as for One-Year Ancillary Chemistry.

Geology (One-Year) Ancillary to Botany

As for Geology (One-Year) Ancillary to Chemistry *see* pp. 1322/3.

Geology (Two-Year) Ancillary to Botany

As for Geology (Two-Year) Ancillary to Geography *see* pp. 1334/5.

Physics (One-Year) Ancillary to Botany

One or two written papers and a three-hour practical examination.

General Physics and Heat

Atomic and molecular structure of matter : the states of matter, the colloidal state. Fundamental notions of mass and force, energy and work. Simple harmonic motion : wave motion. Elements of hydrostatics. Elementary gas-kinetic theory. The gas laws. Viscosity. Surface tension and surface energy. Diffusion in liquids and gases : osmosis, laws of osmotic pressure and its measurement, dissociation. Saturated and unsaturated vapour, the measurement of vapour pressure. Thermometry. The calorie and the mechanical equivalent of heat. Specific heat and its measurement. Change of state, melting and boiling points. Latent heats and their measurement. Heat transfer, radiation, Kirchhoff's and Stefan's laws, methods of detecting and measuring radiation. First law of thermodynamics.

Light

Elements of the wave theory ; simple treatment of interference and diffraction ; the scattering of light, the ultra-microscope. Elementary treatment of reflection, refraction and dispersion. Magnifying power of lens systems. Resolving power. The complete spectrum of white light, the spectroscope. Absorption and absorption coefficients ; selective absorption and omission. Polarisation, double refraction ; rotatory polarisation, the polarimeter. Fluorescence. Photometry. Colorimetry.

Electricity and Magnetism

Elements of electrostatics. Electrostatic instruments. Magnetic fields and their measurement. Magnetism as a general property of matter. The electric current, its magnetic, thermal and chemical effects ; detecting and measuring instruments. Ohm's law, the potentiometer, measurement of resistance. Conductivity in electrolytes, Faraday's laws of electrolysis, ionic mobilities. Electromagnetic induction and its practical applications. Alternating current ; transformers ; instruments for the measurement and control of alternating current. An outline of the history of the discovery of X-rays and of the negative and positive electron, the proton and the neutron ; natural and artificial radio-activity, the transformation of the elements.

Physics (Two-Year) Ancillary to Botany

One or two written papers and a practical examination.

The subject-matter of the one year ancillary course treated more fully and precisely with some discussion of the following topics :—

General Physics and Heat

Elasticity and plasticity. Colloid physics. Surface phenomena. Van der Waals' and other equations of state. The second law of thermodynamics ; entropy. Irreversible processes. Free and total energy.

Electricity and Atomic Physics

Thermoelectricity. Dipole theory. Thermionic valves. Photo-electricity. Elementary quantum physics. X-ray spectra. The use of X-rays in the analysis of structure. Radio-activity. Isotopes. Simple examples of nuclear reactions.

Practical Examinations

Candidates must bring to the practical examination their practical note-books which must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

In both courses, emphasis should be laid on such physical topics, methods and apparatus as bear most closely on biological problems and their investigation.

Physiology (One-and Two-Year) Ancillary to Botany

One Year : As for Physiology Ancillary to Chemistry, p. 1326.

The Two-Year syllabus consists of a more advanced treatment of the same fields of study to be covered in the One-Year, with emphasis laid on the following :—

Biological control systems, and in particular, the regulation of blood pressure, of temperature of ventilation rate and of the blood sugar concentration.

Energy exchanges in biological reactions.

Kinetics of enzyme action.

Relation of living cells to their environment.

Cellular oxidations-anærobiosis.

Statistics (One-Year) Ancillary to Botany

One or two written papers.

1. Elementary mathematical theory of the binomial, Poisson, normal, and χ^2 distribution.

2. The theory of sampling. Standard errors of estimates. Tests of significance.

3. The biometrical description of populations.

4. Regression and correlation.

5. The statistics of population showing Mendelian inheritance, with special reference to selection and inbreeding.

6. Mathematical treatment of growth. Allometry.

7. The simpler methods of the analysis of variance, applied to the planning and analysis of experiments.

Practical Examination

The student will be expected to perform actual measurements and stress will be laid on speed and accuracy of computation. Candidates must bring to the practical examination their *original* note-books of practical work which they have carried out, for inspection by the examiners. These note-books will be examined, and must be certified by the teacher, if any, that the work is the candidates' original experimental work. Candidates not in attendance at a teaching institution must include in their note-books a statement showing how they carried out their practical work.

Statistics (Two-Year) Ancillary to Botany

[*To be published later.*]

Zoology (One-Year) Ancillary to Botany

[The course should be covered by about 70 lectures and at least 120 hours' practical work.]

The course shall consist of an elementary study of living animals including :—

1. The anatomy (gross and microscopic) and physiology of a mammal.
2. The structure and mode of life of animals illustrated by reference to members of the following phyla :—Protozoa, Coelenterata, Platyhelminthes, Annelida, Arthropoda, Mollusca, Echinodermata, Chordata.
3. Reproduction and development. Comparative physiology. Cytology, Genetics, Evolutionary theory and the basis of taxonomy.

Practical Work

The following scheme indicates the scope of the practical work, but is not binding in detail :—

1. A study of the following animals (or equivalent substitutes) should form the basis of the practical work in morphology. Observations on living animals are to be included. It is recommended that the animals marked with an asterisk should be dissected ; the others are to be used as illustrations of the groups to which they belong :—

PROTOZOA : *Amoeba*, *Paramecium*, *Euglena*, *Monocystis*, *Plasmodium*.
 COELENTERATA : *Obelia*, a sea anemone.*
 PLATYHELMINTHES : a planarian, a tapeworm.
 ANNELIDA : *Nereis*, *Lumbricus*.*
 ARTHROPODA : *Astacus*,* a centipede, a spider, a cockroach, a butterfly, a bee.
 MOLLUSCA : *Helix*, *Mytilus*, a cephalopod.
 ECHINODERMATA : *Asterias*, *Echinus*, *Antedon*.
 CHORDATA : *Amphioxus*, a dogfish,* a frog,* a lizard, a bird, a mammal.*
2. The structure of a cell and cell division. The main vertebrate tissues and organs.
3. Cleavage and development of the frog up to the neurula stage. The development of the chick up to the end of the third day. Demonstration of a foetal mammal showing the embryonic membranes and the placenta.

4. Experiments should be performed, or at least seen, to illustrate the principles of comparative physiology and genetics.

Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidate at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Zoology (Two-Year) Ancillary to Botany

Two written papers and a practical examination not exceeding six hours.

[The syllabus and the examination will be identical with that for the B.Sc. (General) Examination for External Students.]

The main facts and principles of Zoology as exemplified by :—

(a) An elementary study of the comparative anatomy of the phyla named below in (b), together with the classification founded on it.

(b) A detailed study of the anatomy, habits and life-history of *each* of the named types (*or equivalent substitutes*) together with a consideration of the functions of their various organs (observations to be made on living animals wherever possible).

PROTOZOA : Amoeba, Polystomella, Actinosphaerium, Sphaerocyst, Euglena, Ceratium, Trypanosoma, Paramecium, Opalina, Vorticella, Ephelota, Monocystis, Eimeria, and malarial parasite.

PORIFERA : Grantia.

COELENTERATA : Tubularia, Obelia, Aurelia, Physophora, Alcyonium, an actinian, Hormiphora.

PLATYHELMIA : Leptoplana, Fasciola, Taenia.

NEMERTINEA : A nemertine.

NEMATHELMIA : Ascaris.

CHAETOGNATHA : Sagitta.

ROTIFERA : A rotifer.

PHORONIDEA : Phoronis.

SIPUNCULOIDEA : Sipunculus.

POLYZOA : Bugula, Pedicellina.

BRACHIOPODA : Lingula.

ANNELIDA : Nereis, Tubifex, Hirudo.

ECHINODERMATA : Asterias.

MOLLUSCA : Buccinum, Aplysia, Helix, Anodonta, Sepia.

ARTHROPODA : Daphnia, Lepas, Astacus, Carcinus, scorpion, spider, Peripatus, cockroach.

HEMICHORDATA : Balanoglossus.

UROCHORDATA : Ciona.

CEPHALOCHORDATA : Amphioxus.

CYCLOSTOMATA : Petromyzon.

PISCES : Raia, Gadus.

AMPHIBIA : Salamandra, Rana.

REPTILIA : Lacerta, Tropidonotus.

AVES : Pigeon.

MAMMALIA : Cavia.

(c) The elements of cytology and histology.

(d) Asexual and sexual reproduction and parthenogenesis. The various types of segmentation, gastrulation and germ layer formation. The development of the characteristic embryos and larvae of the different phyla, and the elements of experimental embryology, the later development of the organs of a vertebrate.

(e) An elementary study of genetics.

(f) Variation, principles of classification, evolutionary evidence and theories of evolution.

(g) Ecological and other factors which influence the distribution of animals.

Practical Work

The above syllabus (Sections a-g) will also form the basis for the practical examination.

Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

CHEMISTRY

[Note.—*The last examination under the Old Regulations will be held in 1955.*]

1. Candidates for the B.Sc. Special Degree in Chemistry under the revised regulations must have satisfied requirements (a), (b) and (d) under the general heading "Qualification for Admission" (page 1302); under requirement (c) must have passed in the subjects

- (i) Pure Mathematics (or Mathematics, Pure and Applied)
- (ii) Physics
- (iii) Chemistry ;

[Note.—*Special Regulations regarding Qualifications for Admission have been approved for full-time students at the University Colleges of Exeter, Hull and Leicester.*]

and must satisfy the examiners in the following examinations :—

(i) A written test on translation into English of scientific texts in German. The test may be taken at any time at which an examination is held. The use of dictionaries will be allowed.

(ii) An examination in Ancillary subjects in :—

(a) Any one of the Subjects **Biology** or **Physiology** or **Geology**.

The examination will be of a standard such as could be reached by a student with no previous knowledge of the subject who has pursued a full-time course extending over one year, and should normally be taken at the end of the first year of the degree course.

(b) Mathematics.

The examination will be of a standard such as could be reached by a student who has obtained the Preliminary qualification and has subsequently pursued a full-time course extending over one year and should normally be taken before or at the same time as Part I of the Final Examination.

(c) Physics

The examination will be of a standard such as could be reached by a student who has obtained the Preliminary qualification and has subsequently pursued a full-time course extending over two years, and should normally be taken with Part I of the Final Examination.

There will be a written examination of one or two papers in each subject and a practical examination in each subject except Mathematics.

(iii) Part I of the Final Examination in Chemistry

The examination may be taken not earlier than two years after completion of the Preliminary qualification, and will consist of three written papers, one each in Inorganic Chemistry, Physical Chemistry and Organic Chemistry. There will be no practical examination, but candidates will be required to submit certified records of the laboratory work which they have carried out during their course for inspection by the Examiners.

(iv) Part II of the Final Examination in Chemistry

The examination may be taken not earlier than one year after the candidate has satisfied the Examiners in Part I and in Ancillary Mathematics, and will consist of three written papers : one each in General Chemistry, Physical Chemistry and Organic Chemistry, and a practical examination. Candidates will be required to submit certified records of the laboratory work which they have carried out during their course for inspection by the Examiners.

2. A candidate who enters for examination on the same occasion in more than one Ancillary subject and who passes in one subject but fails in the other will be credited with the subject or subjects in which he passes.

3. A candidate who enters for examination on the same occasion in one or more Ancillary subjects and in Part I of the Final examination and who passes in one or more subjects or in Part I will be credited with the subject or Part in which he passes.

4. A candidate who enters for examination on the same occasion in one or more Ancillary subjects and in Part II of the Final examination and who passes in the Ancillary subject(s) but fails in Part II will be credited with the subject(s) in which he passes.

5. A candidate who has previously failed in an Ancillary subject or subjects and who re-enters for examination on the same occasion with Part II of the Final examination will be required to pass the examination in all subjects in which he has entered.

6. A candidate who enters for examination for the first time in an Ancillary subject or subjects with Part II of the Final examination and who passes Part II but fails in the Ancillary subject or subjects will receive no report on the Part II examination but will be permitted to re-enter for examination on one subsequent occasion only in the subject(s) in which he failed.

7. For use in the practical examination in Chemistry, candidates are permitted to bring in any book or books they wish, including their own laboratory note-books.

8. All answers to examination questions shall be written in English unless instructions are given to the contrary.

EXEMPTIONS

1. A candidate who has passed an Intermediate Examination of this University with Biology or Physiology or Geology, may claim exemption from the examination in Ancillary Biology or Physiology or Geology.

2. A candidate who has obtained the degree of B.Sc. Special in Mathematics of this University may claim exemption from the examination in Ancillary Mathematics.

3. A candidate who has obtained the degree of B.Sc. Special in Physics of this University may claim exemption from the examinations in Ancillary Mathematics and Ancillary Physics.

4. A candidate who has obtained the degree of B.Sc. Special in Geology or Botany or Zoology or Physiology of this University may claim exemption from the examination in the optional ancillary subject.

5. A candidate who has obtained the degree of B.Sc. (Engineering) or B.Sc. (Engineering) in Chemical Engineering of this University may claim exemption from the examination in Ancillary Mathematics.

6. A candidate who has obtained the degree of B.Sc. (General) of this University may claim exemption from those ancillary subjects passed as subjects at the B.Sc. (General) Examination (Botany or Zoology giving exemption from Ancillary Biology) but exemption from the examination in Ancillary Physics will be granted only in approved cases, and each application will be considered individually.

7. Candidates who have obtained the B.Sc. (General) Degree of this University in Pure Mathematics, Physics and Chemistry may apply for permission to complete the examinations necessary for the award of the B.Sc. Special Degree in Chemistry after a further interval of two academic years.

8. No exemption will be granted from the Translation Test or from either Part of the examination in Chemistry.

9. A candidate who desires to claim exemption under any of the above regulations for an examination or examinations in ancillary subjects must make his application for exemption at the time when he applies for approval of candidature for the degree examinations.

THE NEIL ARNOTT STUDENTSHIP IN CHEMISTRY

A Neil Arnott Studentship in Chemistry will be awarded on the result of the B.Sc. Special Examination in Chemistry.

For full particulars see the Scholarships Pamphlet.

SYLLABUSES

Final Examination Part I

[Three written papers]

General Organic Chemistry.—The simple aliphatic, alicyclic, aromatic and heterocyclic compounds from the point of view of structure (including configuration) and reaction (including mechanism and factors influencing reactivity).

Natural Products.—The monosaccharides and the commoner disaccharides.

Physical Chemistry

General physical chemistry including chemical thermodynamics and elementary quantum Mechanics.

Systematic Inorganic Chemistry

[*Note.*—the examination will require a general rather than a highly detailed knowledge of systematic inorganic chemistry.]

PRACTICAL WORK

There will be no practical examination in Part I of the Final Examination, but candidates will be required to submit certified records of the laboratory work which they have carried out during their course for inspection by their Examiners. The inspection of these records will form an integral part of the examination.

Records of laboratory work should be submitted on loose-leaf files or bound note-books. Each loose-leaf file or note-book must bear the name of the candidate, and the full title of the subject. It must be paginated and provided with an index. Each separate item of laboratory work must bear the date at which it was completed.

Records of laboratory work will be returned to candidates immediately after the examination has been completed.

Final Examination Part II

[Three written papers and two seven-hour practical examinations]

Organic Chemistry

General Organic Chemistry.—The more advanced treatment of structure and reactions.

Natural Products.—The more important groups of natural products. A wide choice of questions will be given.

Physical Chemistry

It will be assumed that the candidate has studied a limited number of subjects, chosen from the more important fields of physical chemistry, to an advanced standard. Variations in courses of study will be met by a wide choice of questions.

General Chemistry

The general paper will offer a wide choice of question and in addition to general subjects of wide application may include questions on advanced inorganic chemistry and on the history of chemistry.

PRACTICAL EXAMINATION

Candidates must bring to the practical examination, for inspection by the examiners, the *original* note-books containing the record of their laboratory work, which may include a record of any research work in which they have participated. These must be duly certified by the teacher, if any, that the work is the candidates' original experimental work carried out in the laboratory, and will be taken into account in estimating their qualifications; provided only that the research work be not allowed to take the place of such sound general knowledge of Chemistry as should be required from a candidate for the Special Degree. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates must provide themselves with platinum wire and foil and further may bring into the examination room, for use in the examination, prepared crucibles with a note of their approximate weight. No other chemical apparatus may be introduced into the examination room.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge ; centrifuge tubes ; water bath with cover pierced to take centrifuge tubes ; two long dropping pipettes ; micro burners ; wash bottles 100 cc. polythene squeezing type ; crucibles 25 mm. and 15 mm. ; spotting tiles (porcelain) and microscope slides ; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in. and block to hold these and centrifuge tubes ; rack for dropping pipettes ; long thin spatula ; Whatman papers (No. 120), 2 in. squares ; small porcelain dish ; forceps and tube holders ; anti-bumping tubes to fit in centrifuge tubes ; small conical flask 10 ml. ; pyrex tube fitted for testing evolved gases ; reagents ; strong acids in Jena T.K. bottles, other common reagents in bottles fitted with dropping pipettes.

Translation Test

[One paper of one and one half hours]

Biology Ancillary to Chemistry

[One written paper and one three-hour practical examination]

INTRODUCTORY NOTE.—The following syllabus is intentionally drafted in broad terms in order that each teacher in charge of the course may feel free, after consultation with his colleagues in the relevant Principal Subjects to choose that mode of treatment which appears to be most appropriate.

1. Introduction. The characteristics of life. The general physiological background of living organisms. Nutrition, respiration, growth, irritability, movement and reproduction, broadly treated.

2. General properties of aqueous solutions of crystalloids and colloids in relation to biological phenomena. Biological membranes. Secretion and excretion.

3. The organization of the cell. Cytological detailed study of the nucleus in the process of mitosis and meiosis. Genetics.

4. The comparative morphology and anatomy of selected unicellular and multicellular animals and plants, treated to illustrate increasing elaboration and complexity in relation to fundamental biological and physiological processes. Evolutionary implications. In selecting types the importance of moulds and bacteria in modern chemical processes should be borne in mind.

5. A more detailed study of fundamental physiological phenomena :—

(a) The characteristics and broad classification of the more conspicuous enzymes associated with metabolic processes.

(b) Modes of feeding by animals and plants. Digestion. Absorption of nutrients. Synthesis of complex carbon and nitrogen compounds. Distribution, storage and fate of carbohydrates, fats and proteins. Protoplasm.

(c) Respiration ; aerobic and anaerobic modes of life. Alcoholic fermentation. Gaseous exchange and transport mechanisms. Respiratory pigments.

(d) Food chains. The carbon and nitrogen cycles.

(e) Stimulus and response. Fundamental aspects of movement in animals and plants. Receptors, adjustment mechanisms and effectors in animals.

(f) The essentials of growth, development, and reproduction.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidate at the close of the examination. Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Geology Ancillary to Chemistry

[Two written papers and one three-hour practical examination]

1. Physical Geology

The earth as a planet and member of the Solar System.

Its chief surface features—oceans, seas, continents, mountains, plains, deserts.

The earth's crust and interior. Evidence of the earth's internal nature and structure. Seismic, igneous and diastrophic phenomena. The work of geological agencies, e.g., atmospheric, fluvial, marine, aeolian, and glacial, on the crust.

The processes of denudation, transport, deposition, and deformation of rock-material.

2. Mineralogy

The common rock-forming and vein-forming minerals ; their physical characters, chemical composition, and modes of origin and occurrence. The elements of crystallography ; crystallographic notation and representation.

The simple optical characters of the more common rock-forming minerals and the principles upon which such characters are determined.

3. Petrology

The chief characters, modes of origin, and occurrence of typical igneous, sedimentary, and metamorphic rocks.

4. Palaeontology

Fossils, their preservation, and distribution in rocks of different ages.

The elements of palaeontology as shown by the more commonly-occurring fossils.

5. Historical Geology

The disposition of rocks and its representation on maps.

Criteria of the relative ages of rocks.

The geological systems ; their broad characters and distribution in Great Britain.

PRACTICAL WORK

Interpretation of simple geological maps in terms of rock-structure and its relation to topography ; expression of this interpretation by means of sections ; graphic methods of finding thickness, dip and strike of beds, of completing outcrops, and of tracing the underground extension of strata.

Identification and description of common minerals and rocks with and without the microscope.

Identification, description, and representation of crystal forms of common minerals, as shown by models and actual crystals.

Identification and description of common fossils.

Reference of fossils to their chief biological groups and their geological periods.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Mathematics Ancillary to Chemistry

[Two written papers]

INTRODUCTORY NOTE.—The following syllabus is to be read as delineating a working knowledge of those mathematical concepts, principles and methods which are needed in the formation of chemical theory. Thus rigorous general proofs of all the mathematical theorems are not expected : descriptive accounts of proofs, together with some specific illustrations, will usually suffice. The ability to use standard tables of integrals and tables of the properties of the principal mathematical functions is expected.

Calculus.—Simple functions of one variable. Maxima and Minima. Tangents, normals, and curvature of plane curves.

Series.—Taylor's Series. Use of binominal, exponential, logarithmic, sine, and cosine series. Elementary Fourier series. Power series.

Plane Geometry.—Elementary properties of circle, parabola, ellipse, hyperbola. Methods of curve plotting, with applications to simple well-known curves.

Dynamics.—Damped Harmonic motion. Orbits under central forces. Conservation of energy and angular momentum.

Solid Geometry.—Elementary properties of sphere and quadrics. Curvature of surfaces. Wave surfaces.

Calculus.—Simple functions of two variables. Maxima and Minima. Tangent planes and normals of surfaces.

Reduction to standard forms. Use of standard tables of integrals. Lengths of arcs of plane curves. Plane areas. Areas of revolution. Surfaces. Volumes of solids of revolution. Centroids. Moments and products of inertia. Probability integrals. Simple multiple integrals, including change of variables. First variation of an integral.

Complex Variable.—Argand diagram, exponential values of the sine and cosine, Demoivre's theorem. Hyperbolic Functions.

Dynamics.—Introduction to normal modes of vibration.

Differential Equations.—Perfect differentials. Ordinary equations of first order. Linear equations with constant coefficients treated by Heaviside's operational method. Partial differential equations of heat conduction and wave motion. Operational methods of solution.

Physics Ancillary to Chemistry

[Two written papers and one six-hour practical examination]

INTRODUCTORY NOTE.—The following syllabus is to be read as delineating a knowledge of those physical phenomena which enter essentially into the study of Chemistry, and of those practical methods and tools of Physics which are employed in the treatment of chemical problems.

It is recognized that, whilst there can be no sharp boundary between Physics and Chemistry, the courses in Physics Ancillary to Chemistry and in Chemistry will be arranged as essentially complementary. Accordingly, a number of topics are marked with an asterisk in the Syllabus below, as an indication that they may be treated in the courses in Chemistry.

PROPERTIES OF MATTER

Elementary Theory of Elasticity.—Meaning and measurement of the different moduli of elasticity and the relations between them. Simple treatment of bending of beams. Elastic limit and elastic after-effect.

Elementary Theory of Flow.—Stream-line motion. Vortex motion. Turbulent motion. Newtonian viscosity. Measurement of viscosity. Reynold's number : dimensions of physical units. Non-Newtonian viscosity.

**Surface Tension.*—Methods of measuring surface tension and angle of contact. Variation of surface tension with temperature. Surface tension and surface energy. Surface films : monomolecular layer.

**Kinetic Theory.*—Pressure : deduction of velocity of mean square. Maxwell-Boltzmann distribution of energy and velocity. Specific heats of gases. Equipartition of energy. Brownian motion. Viscosity and thermal conductivity. Elementary quantum theory and its relation to specific heats of gases. Properties of gases at very low pressures. Production of very low pressures ; rotary pumps, diffusion pumps, cooled charcoal getters. Measurement of very low pressure : McLeod, Pirani, Knudsen, and other types of gauge.

*The production and measurement of high pressure.

Simple theory of vibrations and waves.

Simple harmonic vibration : relation between period and restoring force, potential and kinetic energy.

Damped harmonic vibrations : effect of damping on period and amplitude. Critical damping.

Forced harmonic vibration : effect of damping on response and phase relationship. Resonance.

Simple consideration of coupled vibrations.

General Wave Theory.—The simple plan wave mathematically treated : velocity determined by density and restoring force. Reflexion, refraction, interference, diffraction, illustrated by ripples. Dispersion. Wave velocity and group velocity.

Sound Waves.—The properties of waves as illustrated by sound. Measurement of velocity in air and other gases : in liquids : in solids.

Fourier analysis and synthesis as exemplified by sound waves, simply treated. Vibrations of strings, rods, plates. Source of sound. Doppler effect. Analysis of sound. Supersonic waves.

Electromagnetic Waves.—General review of wave properties of light and wireless waves as preparation for more detailed treatment later.

* *The Properties of Real Fluids.*—Van der Waals' equation and equations of state. The theory of corresponding states. The Joule-Thomson effect. The liquefaction of gases and the production of very low temperatures. Low temperature phenomena.

HEAT

Mechanical equivalent of heat measured in different ways. Principles of thermometry : mercury thermometer.

* *Specific Heats.*—Measurement of specific heats and latent heats at all temperatures. Variation of specific heat with temperature : the quantum theory of specific heat in outline.

Measurement of Thermal Conductivity.—Wiedemann-Franz law.

Thermal Radiation.—Black body radiation : Kirchhoff's law. Stefan's law. Radiation pyrometry. The distribution of black body radiation. Wien's law. Planck's law. Optical pyrometers.

LIGHT

Geometrical Optics.—The properties of thick lenses. The simple optical instruments : telescope, microscope, refractometer, photometer, prism spectrometer.

Wave Properties of Light.—Conditions for interference : interference phenomena : biprism, Newton's rings. Interferometers.

Diffraction.—Slit and circular aperture. Resolving power. Diffraction grating : diffraction spectroscopy.

Polarisation.—Polarisation by reflexion. Simple treatment of crystal optics. Nicol prism. Polaroid. Behaviour of uniaxial crystal in parallel light. Circularly polarised light. Artificial double refraction : photoelasticity. Rotary polarisation.

Infra-red and ultra-violet, their generation, detection, and measurement. Absorption.

Generation of different types of spectra. Spectrometry in ultra-violet, visible, and infra-red.

ELECTRICITY AND MAGNETISM

Static Electricity.—Electric intensity, potential, and induction : Gauss' theorem. Energy of field. Dielectric polarisation. The condenser. The dielectric constant and its measurement. Electrometers.

Magnetism.—The static magnetic field and its measurement. Magnetic intensity, potential, and induction. Magnetic induction. Permeability and susceptibility. Ferro-, para-, and dia-magnetism. Electromagnets.

The Steady Current.—Kirchoff's laws. Electric resistance and its measurement. Platinum resistance thermometer. The potentiometer. Galvanometers of all types including ammeters.* Electrolysis and Faraday's laws. Units. Determination of absolute units.

Electromagnetics.—The magnetic force due to a current : Ampère's circuital relation. Force on a current in a magnetic field. Electromagnetic induction : Faraday's circuital relation. Ballistic galvanometer. D.C. motors.

Thermo-electricity.—Seebeck, Peltier, and Thomson effects. Measurement of thermo-electric power. Peltier and Thomson coefficients. Thermo-electric diagram. Thermocouples : their construction and use.

Alternating electric current.—Elementary theory of the circuit with resistance, capacity, and induction : impedance and reactance. Power factor. Simple A.C. bridges, with applications to measurement of resistance of electrolytes. A.C. meters and motors. Dynamos. Transformers. Rectifying devices.

The tuned circuit. Simple valve oscillators and amplifiers. Simple circuit measurements.

Electromagnetic Waves.—Displacement current. Reconsideration of Faraday and Ampère circuital relation. Deduction of Maxwell's equations.

The plane electromagnetic wave. Deduction of velocity in empty space from Maxwell's equations. The interaction of electromagnetic waves with a material non-conducting medium. The simple theory of dispersion : relation between frequency and velocity. The relation between refractive index and dielectric constant.

The electromagnetic spectrum. The reasons for the different behaviour shown by X-rays, ultra-violet, visible light, infra-red, and electromagnetic waves of greater frequency.

ATOMIC STRUCTURE

The Elementary Nuclear Theory.—The general structure of the atom. Size of the nucleus. Atomic weight and atomic number : isotopes. The disruption of the nucleus by alpha particles and by artificial high-speed particles. Radioactivity, natural and artificial.

The Extra-nuclear Structure.—The simple theory of line spectra. General elementary sketch of the wave-mechanical theory.

The Instruments of Atomic Investigation.—Wilson cloud chamber counters : high voltage installations : cyclotron.

ELECTRONIC PHYSICS

The General Properties of the Electron.—Conduction in gases : cathode rays. Determination of e/m and of e . Reference to variation of mass with velocity.

Photo-electric Effect.—Establishment of the effect. Variation with wave length of light. Work function. Photo-electric cells.

Thermionic Effect.—Establishing the effect. Work function. Application of effect in hot cathode rectifiers and valves.

Mass Rays.—Canal rays. Anode rays. Determination of e/m . Mass spectrograph. *Mass number. *Packing effect.

Electronic Instruments.—Cathode ray oscillograph : mercury rectifier : thyatron : elementary properties of valves and valve circuits.

X-rays.—Generation of X-rays. General properties of X-rays. X-ray series, in comparison with optical spectra. Diffraction of X-rays by crystals. Bragg's law. Spectroscopy of X-rays. *Elements of crystal structure analysis.

Wave Properties of Electron.—Establishment of wave properties. Electron diffraction apparatus. Electron microscope.

Candidates must bring to the practical examination their practical note-books which must contain a certificate by their teachers, if any, that the work is the candidates original experimental work carried out in the laboratory for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Physiology Ancillary to Chemistry

[Two written papers and one three-hour practical examination]

The characteristics of life. The form and structure of the living cell. The inorganic and organic constituents of living cells and tissues. The properties of living membranes and their physiological consequences.

Motor activities of cells and tissues and their electrical properties. The mechanical efficiency of muscular exercise.

Nerve impulses, and the excitability of nerves and muscles. An outline of the structure and reflex activities of the central nervous system. The eye and vision. The ear and hearing. The autonomic system.

An outline of the structure and function of the cario-vascular system and of the respiratory system. Blood, its composition and respiratory function.

General metabolism, temperature regulation and the thermal equilibrium of the body.

Foodstuffs including proteins, fats, carbohydrates, inorganic substances and vitamins—their sources and some of their chemical properties of nutritional importance.

Excretion. Water balance.

Digestion. The gross structure of the alimentary system and movements of the digestive tract. The secretion of digestive juices and the properties of their constituents. Absorption in the digestive tract.

Hormones and the principles of chemical co-ordination.

Reproduction.

The principles of biological assay of (a) hormones (b) vitamins.

The principles of the methods of investigating the action of a drug on animal functions.

Candidates are required to bring to the practical examination their *original* note-books for inspection by the examiners. Note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

GEOGRAPHY

(Note.—*The examinations for one-year ancillary subjects will be held for the first time in 1953 ; those for two-year ancillary subjects will be held for the first time in 1954 ; the Final Examination in Geography under the Revised Regulations will be held for the first time in 1955. Examinations under the Old Regulations will be held up to and including 1955.*)

Candidates for the B.Sc. Special Examination in Geography under the Revised Regulations must have satisfied requirements (a), (b) and (d) under the heading "Qualifications for Admission" (p. 1302), and under requirement (c) must have passed in three science subjects of which Geography need not have been one.

A candidate who has satisfied requirements (a) and (b) but who has not completed requirement (c) may be permitted to complete requirement (c) by entering for examination in the required subject or subjects at the Intermediate Examination in Science, and may, at the same time, enter for examination in the one-year ancillary subject, provided that such ancillary subject does not correspond to one of the subjects being offered by the candidate in order to satisfy the requirements for admission to the degree course.

A candidate who has included Geology or Physics in the three science subjects required for admission will not be permitted to offer either of these subjects as a one-year ancillary subject, but a candidate who has passed in four science subjects including Geology or Physics may apply for exemption from the examination in Geology or Physics as the one-year ancillary subject.

1. Candidates for the Degree must satisfy the Examiners in the following examinations :—

(i) An examination in ancillary subjects in :—

(a) Any *one* of the subjects :—**Anthropology, Biology, Botany, Economics, Geology, Mathematics, Physics, Statistics**, which should normally be taken at the end of the first year of the degree course.

(b) A *second* subject selected from the list of subjects in (a) above with the addition of **History**, which should normally be taken at the end of the second year of the degree course.

The standard expected in these ancillary subjects will be that normally attained by a full-time student after courses of one and two years respectively.

Candidates must select **Geology** as one of their ancillary subjects either for the One-Year or for the Two-Year course and examination.

(ii) The **Final Examination in Geography**, to be taken not earlier than three years after completion of the Preliminary Qualification, and not earlier than one year after the candidate has (a) passed the examination in the one-year ancillary subject and (b) passed or been referred at the examination in the two-year ancillary subject.

2. A candidate who enters for examination on the same occasion in both Ancillary Subjects and who passes in one but fails in the other will be credited with the subject in which he passes.

3. A candidate who enters for examination in the two-year Ancillary Subject but fails to satisfy the examiners may be referred and permitted to re-enter for examination in that subject on any subsequent occasion.

4. All answers to examination questions shall be written in English unless instructions are given to the contrary.

EXEMPTIONS

A student who is already a graduate of the University may apply for exemption from the examination in one or more of the ancillary subjects. Each case will be considered individually on its merits.

SYLLABUSES

Final Examination in Geography

The examination will consist of nine written papers, and the inspection by the examiners of the original note-books and evidence of field-work. Material specimens should not be submitted. The examiners simply require clear records of evidence that the candidate has received instruction in field-work or has gained the necessary knowledge and experience by carrying out a proper programme of field-work on his own initiative.

1. Physical Basis of Geography.
2. Elements of Cartography and Map Interpretation.
3. Elements of Comparative Regional Geography.
4. The British Isles.
5. Advanced Regional Geography (two papers).
6. Problems of Modern Geography, and
7. *One* optional subject (two papers), chosen from the following :—
 - (i) Mathematical Geography and Surveying ;
 - (ii) Geomorphology ;
 - (iii) Meteorology and Climatology ;
 - (iv) Plant Geography ;
 - (v) Economic Geography ;
 - (vi) Historical Geography ;
 - (vii) History of Geographical Ideas and Discovery ;
 - (viii) Political Geography.

I. PHYSICAL BASIS OF GEOGRAPHY

Outline survey of the physical geography of Land, Air and Ocean and of major biological distributions as constituents of the human environment.

- (i) *The Land.* Nature and effects of tectonic and erosional processes in the evolution of landscape. Water supply, soils and metallogenesis (nature and emplacement of ore bodies).
- (ii) *The Air.* Elementary descriptive and synoptic meteorology. Data and methods of climatology, and the elements of micro-climatology.
- (iii) *The Ocean.* The history of oceanographic discovery. Salinity, temperature, density and structure of water masses. The circulation of the oceans. The oceanography of enclosed seas. The tides.
- (iv) *Biogeography.* Vegetation. Principles of transpiration, respiration, growth and reproduction. Food requirements. Photosynthesis and the nitrogen cycle. Fertility under conditions of cropping and grazing. Principles of plant succession and classification of plant communities. Certain aspects of animal ecology ; marine life and fisheries. Insects and insect-borne diseases.

Knowledge of (a) such general Geology as is relevant to the study of Geography, and (b) maps appropriate to this syllabus, will be regarded as an integral part of the work in this subject. The examination may include questions involving map interpretation.

2. ELEMENTS OF CARTOGRAPHY AND MAP INTERPRETATION

- A. (i) The cartographic characteristics of the major topographical and other survey maps of Europe and North America.
(ii) The broad outlines of the history of map-making, with special reference to the development of Ordnance Survey maps.
(iii) Cartographic and diagrammatic methods of expressing data relating to weather, climate, economic and population conditions. Candidates will be expected to be familiar with :
(a) The more important sources of statistical information ;
(b) The use and general significance of simple statistical methods ; (c) The technique of drawing maps and diagrams ;
(d) The Interpretation of (including measurements from) such maps and diagrams.
- B. (i) General principles of topographic survey, including the use of instruments in the field.
(ii) The principles and properties of the following map projections : Zenithal (gnomonic, stereographic, orthographic, equal area, equidistant). Simple conical with one and two standard parallels. Bonne, Polyconic, International ; Sinusoidal, Mollweide, Cassini and Mercator. Candidates will be expected to construct these projections by simple graphical methods where possible, or from simple tables.

N.B.—The necessary knowledge of very elementary plane trigonometry is assumed.

C. Map Interpretation.

3. ELEMENTS OF COMPARATIVE REGIONAL GEOGRAPHY

- (i) Elements of human geography. Consideration of the facts and concepts of the geography of society ; types of settlements, population densities, economy and political organization.
(ii) The forms and inter-relations between the main land and water masses of the Earth in their bearing upon world relations in human geography and the geographical orientation of regions.
(iii) A reasoned and critical comparative study of the nature and diversity of human settlement and economy in regions generally homologous in climate and physiography.

The ground covered in this syllabus is intended to constitute a general survey of the principles of human geography, pursued throughout by reference to specific regional examples.

4. THE BRITISH ISLES

- (i) The present conditions, the inter-relations and the evolution of the various physical, biological and human elements in the geography of the British Isles. A study of regions, including an evaluation of the relative importance of their component elements.
(ii) Historical geography ; the study of the past as an aid to the interpretation of the present with special reference to distributions of human significance.

- (iii) Candidates will be expected to use and interpret the published maps of the Ordnance Survey, Geological Survey and Land Utilisation Survey, and to show a more detailed knowledge of areas which they have studied in the field.

5. ADVANCED REGIONAL GEOGRAPHY

The two papers under this heading will include special reference to the British Isles and Western and Central Europe and another approved Region (*e.g.*, North America or Monsoon Asia or Africa).

6. PROBLEMS OF MODERN GEOGRAPHY

The scope and method of modern Geography.

The critical appreciation of the place of the chief types of region, physical and cultural, in human geography.

Topics concerned with the subject matter of the syllabus as a whole, excluding only the specialist aspects of the Optional Subjects.

7. OPTIONAL SUBJECTS

Candidates must state, when applying for approval of candidature, which Optional Subject they select.

(i) *Mathematical Geography and Surveying*

The principal methods of Topographical Surveying : Air Survey ; Elements of Field Astronomy. The principles of Geodesy. An advanced study of Map Projection including those studied in Section 2 of the syllabus, above.

An elementary knowledge of plane and spherical trigonometry will be assumed.

(ii) *Geomorphology*

- (i) The Earth, its nature, constitution and physical condition. Continents and ocean basins, their nature, significance and the theories of their origin. Mountain-building : Theories of orogenesis and of the related fields of tectonic geology and geo-physics. Vulcanicity.
- (ii) A critical study of the processes and results of land sculpture and the contributions of rock character thereto, under different climatic conditions. The concept of the cycle of erosion in its various applications. Drainage development and the principles employed in reconstructing the physical history or denudation chronology of a landscape.

(iii) *Meteorology and Climatology*

The more advanced study of the subject matter of the relevant sections of the syllabus in "Physical Basis of Geography" with particular reference to the following :—

- (i) The construction and use of the chief meteorological instruments. The physical processes of the atmosphere. Radiation and heat-balance. Condensation and Precipitation. Stability and Instability.
- (ii) The origin, characteristics and transformations of air masses, considered in relation to the general circulation of the atmosphere and to weather forecasting.
- (iii) The application of the general principles of elementary physical, dynamical and synoptic meteorology to the study and classification of climates.

- (iv) The evidence for climatic changes during geological and historical times and the theories of causation of such changes.

(iv) *Plant Geography*

- (i) A systematic study of characteristic economic plants (in the widest sense) and of their biological attributes, including factors in distribution.
- (ii) Plant ecology with special reference to the operation of habitat factors.
- (iii) Distribution of vegetation in Britain and the factors controlling it.
- (iv) General regional plant geography.

A knowledge of Botany to Intermediate or General Certificate of Education, Advanced Level standard is assumed. Section (ii) will involve work in the field.

(v) *Economic Geography*

The geography of production in a modern economy, with particular reference to the selection and utilisation in production of the physical conditions in the light of the economic conditions. Geographical application of distinctive economic principles such as equi-marginal utility and comparative cost ; evaluation of geographical margins of production,

- (i) Geography of primary production—Agriculture, Forestry, Mining, Fisheries.
- (ii) Geography of Manufacturing Industry.
- (iii) Geography of Trade and Transport.

A knowledge of Economics to Intermediate or General Certificate of Education, Advanced Level standard will be assumed.

(vi) *Historical Geography*

- (i) A general study of the inter-relation between man and his physical environment in historical time, to be illustrated by specific instances.
- (ii) A more detailed study of the historical geography as thus defined of the first and one other of the following regions :—
 - The British Isles.
 - The Mediterranean Region.
 - Western and Central Europe.
 - North America.
 - Latin America.

(vii) *History of Geographical Ideas and Discovery*

Candidates will be required to show an outline knowledge of the subject and will be examined also in a special study of the geographical ideas and the discoveries of *one* of the following periods :—

- (i) Ancient times to A.D. 500.
- (ii) Mediæval times up to the early 15th century.
- (iii) The 15th and 16th centuries.
- (iv) The 17th and 18th centuries.
- (v) The 19th century.

Candidates will be expected to show some first-hand acquaintance with original sources of their chosen period.

(viii) *Political Geography*

I. A general study of the inter-relations of the geography (physical and human) and the State since the early nineteenth century.

II. Specialised study from the politico-geographical standpoint of *two* of the following subjects, one chosen from Section A, the other from Section B.

A. Specific aspects :—

- (i) Imperial expansion—in relation to particular examples.
- (ii) Frontiers and boundaries.
- (iii) Internal administrative divisions.
- (iv) Strategic geography.
- (v) Demographic geography (including migration and population trends).
- (vi) The changing political map of Europe since 1815.

B. Specific areas :—

- (i) The Far East.
- (ii) The U.S.S.R.
- (iii) The Muhammadan World.
- (iv) The Americas.
- (v) Western Europe.
- (vi) Central Europe.
- (vii) Eastern Europe.
- (viii) The Mediterranean Lands.
- (ix) The Pacific Basin.

In respect of the chosen sections A and B above, candidates will be expected to show an adequate knowledge of the relevant political and economic history.

Anthropology (One-Year) Ancillary to Geography

(As for Anthropology Ancillary to Psychology see p. 1356.)

Anthropology (Two-Year) Ancillary to Geography

(As for Anthropology Ancillary to Psychology see p. 1357.)

Biology Ancillary to Geography

Syllabus as for Biology Ancillary to Chemistry (see pp. 1320-21).

Candidates taking Biology as a One-Year Ancillary subject will take one written paper and one three-hour practical examination.

Candidates taking Biology as a Two-Year Ancillary subject will be examined on the same syllabus studied in greater detail and will take two written papers and a practical examination not exceeding six hours.

Botany (One-Year) Ancillary to Geography

(1) The vegetative morphology, anatomy and physiology of a flowering plant, with special reference to the relation between structure and function. Meristematic, assimilatory, conducting and mechanical tissues. Absorption, conduction, transpiration, photosynthesis, respiration, growth, movements, germination. The herbaceous and arboreal habits. The outlines of secondary thickening and cork-formation. The aim should be to bring out the salient facts of the organisation and functioning of higher plants.

(2) The characteristics of different groups of the Vegetable Kingdom to offer some review of the variety of plants.

The following outline is suggested :—

Algæ. Chlamydomonas, Ulothrix, Cladophora, Vaucheria, Fucus (external features, reproduction), Nostoc, a diatom. The types studied should be used to illustrate progressive increase in complexity and the general nature of the reproductive processes in simple plants.

Fungi. Pythium or Phytophthora, Penicillium (conidial stage only), Psalliota, a lichen, the broad facts of structure and reproduction as illustrating specialised modes of life.

Bacteria. General characteristics and importance in nature.

Bryophyta (external characters and outline of reproduction only). A thalloid and a leafy liverwort, a moss.

Pteridophyta (external structure, life-history). A fern, Selaginella.

Gymnospermæ. Pinus (external features and outlines of reproduction).

Angiospermæ. Outline of life-history.

(3) More general topics.

The broad differences in floral structure and their use in the classification of the Angiosperms. A number of families should be studied and some training in the use of a flora given.

Pollination, with special reference to the role of insects. Dispersal (fruit-morphology to be treated only on the broadest lines).

The general characters of soils. The water-relations of plants. Xerophytes, mesophytes and hydrophytes.

The relation of plants to their environment, based on a study of any two plant communities (*e.g.*, health, woodland, pond, etc.).

The outlines of plant-evolution.

Botany (Two-Year) Ancillary to Geography

As for B.Sc. (General).

[Two papers and a six-hour practical examination.]

(1) The morphology and anatomy of plants.

(2) A general introduction to plant physiology and biochemistry.

(3) Plant ecology, and elementary soil science.

(4) Elementary cytology and genetics, and the problems of evolution.

(5) The features of special importance of the following groups, including some fossil forms :—Algae, Bryophyta, Pteridophyta, Spermatophyta ; Fungi, including Bacteria.

(6) An elementary knowledge of the origin and history of the British Flora.

Practical Work

The practical examination will include :—

(1) The description and examination, microscopical or otherwise, of any plants or parts of plants.

(2) The reference to their appropriate systematic positions of plants or parts of plants.

(3) Simple practical exercises in plant physiology.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the students' original work carried out in the

laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Economics (One-Year) Ancillary to Geography

The following syllabus is the same as that for Economics, Section I, at the Intermediate Examination in Arts but will be examined to a higher standard.

The Economic Structure of the United Kingdom

Population : size, sex- and age-distribution. Geographical and occupational distribution.

Industrial Structure : relative size of main industries, their location and organization including agriculture, coal, steel, textiles.

The Labour Market : trade unions and collective bargaining.

International Trade : visible and invisible imports and exports.

National Income and Output : meaning, composition and distribution.

Public Finance : the main sources of revenue and types of expenditure.

Financial Organization : the commercial banks. The Bank of England. The capital market.

Some Elements of economic Analysis

Division of Labour. The Factors determining average income per head. Causes of Location of Industry. Advantages of International Trade.

An outline of the functions of the price-mechanism ; supply and demand in relation to the allocation of resources.

Causes and effects of changes in demand for and supply of goods and factors. Elasticities of demand and supply. The effects of maximum and minimum prices. The incidence of direct and indirect taxes. Causes and effects of monopoly.

The nature and function of money, banks, and the foreign exchange market. The measurement of charges in the general level of prices and their causes.

Economics (Two-Year) Ancillary to Geography

[Two papers.]

Principles of Economics

The principles of Economics, including theories of population, production, value, distribution, money and banking and international trade.

Applied Economics

Applications of economic principles to the analysis of contemporary problems of production, trade, labour, money and public finance.

Geology (One-Year) Ancillary to Geography

(As for Geology Ancillary to Chemistry see pp. 1321-2.)

Geology (Two-Year) Ancillary to Geography

Two written papers and a practical examination not exceeding six hours. The syllabus and examination will be identical with that for the B.Sc. General Examination in Geology.

The syllabus for the Intermediate Examination treated more fully, and in addition the following :—

1. *Mineralogy*.—The properties, diagnostic characters, relationships, modes of occurrence and origin of the chief rock-forming and vein-forming minerals.

2. *Petrology*.—Methods of petrological study. Classification and description of rocks ; their modes of origin ; the changes which they have undergone. The relations of rocks to one another.

3. *Palæontology*.—Characters of the principal types of fossils (chiefly Invertebrata), and the distribution of life in past geological times.

4. *Stratigraphical Geology* (chiefly of the British Isles), and the fossils characteristic of successive periods.

Practical Work

(1) Reading and interpretation of geological and other maps, and the drawing of sections across them.

(2) Identification and description of common minerals, rocks, and fossils in hand-specimens ; and of the more important rocks and their constituents under the microscope.

Satisfactory evidence must be given of adequate instruction having been received by the students in the field.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates may bring petrological microscopes and accessories for use in the practical examination.

History (Two-Year) Ancillary to Geography

Two of the following papers of the B.A. General examination in History. One must be chosen from papers (a) to (f).

(a) History of Greece to 146 B.C.

(b) History of Rome to A.D. 325.

(c) Mediæval European History from the middle of the 4th to the end of the 15th century.

(d) Mediæval English History to the end of the 15th century.

(e) Modern English History from the beginning of the 16th century.

(f) Modern European History from the beginning of the 16th century.

(g) Greek and Roman Constitutions.

(h) The Religions of Greece and Rome down to A.D. 325.

(i) English Constitutional History.

(j) English Economic History.

(k) British Colonial History.

(l) Diplomatic Relations of the Great Powers since 1815.

(Candidates must state, when applying for approval of candidature, which papers they select.)

Mathematics (One-Year) Ancillary to Geography

As for Mathematics Ancillary to Chemistry *see* pp. 1322-3.
 or Papers I and II of the B.Sc. General Examination in Pure Mathematics *see* p. 1361.

Mathematics (Two-Year) Ancillary to Geography

As for Pure Mathematics at B.Sc. (General) *see* p. 1361.

Physics (One-Year) Ancillary to Geography

As for Intermediate Examination in Science *see* pp. 1361-3.

Physics (Two-Year) Ancillary to Geography

As for B.Sc. (General) *see* pp. 1363-5.

Statistics (One-Year) Ancillary to Geography

The examination shall consist of two 3-hour papers. Some of the questions may be of a computational nature.

1. Collection of data and tabulation. Statistical groups. Arithmetic average, mode, median, geometric mean, mean and quartile deviation. Statistical series in time. Trend and fluctuation. Weighted averages. Index numbers. Simple methods of measuring correlation.

2. Principal sources of statistics in the U.K. relating to population, production, consumption, commerce, prices, wages, income, employment.

3. (a) More Advanced Statistical Methods, involving mathematics of the standard required for the paper in Mathematics at the Intermediate Examination in Economics. Elementary mathematical treatment of variation and error (especially in their application to averages), sampling, description of groups and series, and correlation, in relation to economic and social investigations. Methods of interpolation.

(b) Further sources of economic, social, administrative, financial, and transport statistics in the U.K. ; *e.g.*, statistics published by central and local government organisations, public corporations, marketing boards, trade associations, trade unions, banks, transport undertakings, commercial and industrial concerns, journals, etc.

[A knowledge will be expected of all three parts, which carry equal value in the Examination, but in part 3 candidates may confine themselves to either (a) or (b). In 3 (b) a choice of questions will be given.]

Note.—Logarithm tables will be provided by the University and slide-rules may be brought to the examination in this subject.

Statistics (Two-Year) Ancillary to Geography

(*To be prescribed.*)

GEOLOGY

[*Note.*—The examination for one-year ancillary subjects will be held for the first time in 1954 ; that for the two-year ancillary subjects and for Part I of the Final in 1955, and that for Part II of the Final in 1956. Examinations under the Old Regulations will be held up to and including 1956.]

Candidates for the B.Sc. Special Degree in Geology under the revised Regulations must have satisfied requirements (a), (b) and (d) under the heading "Qualifications for Admission" (page 1302), under requirement (c) must have passed in three Intermediate Science subjects and must satisfy the examiners in the following examinations :—

(i) An examination in Ancillary subjects in :—

- (a) any *one* of the subjects :—**Physics, Chemistry, Biology, Botany, Zoology, Mathematics, Geography, Anthropology**, which should normally be taken at the end of the first year of the degree course ;
- (b) a *second* subject selected from the list above, which should normally be taken at the end of the second year of the degree course.

The standard expected in these ancillary subjects will be that normally attained by a full-time student after courses of one or two years respectively.

Any pair of subjects may be chosen and either may be selected for study at the higher level, provided (a) that **Biology** is not taken with **Botany** or **Zoology** ; (b) that one subject is selected from the first five.

(ii) **Part I** of the Final Examination in Geology :—

The standard expected will be that normally attained by a full-time student with no previous knowledge of the subject after a course of two years, and the examination should normally be taken at the end of the second year of the degree course, together with the examination in the two-year ancillary subject. No candidate will be admitted less than two years after completing the admission qualification.

(iii) **Part II** of the Final Examination in Geology :—

The examination may be taken not less than one year after the candidate has (a) passed the examination in the one-year ancillary subject; (b) passed or been referred in the two-year ancillary subject; and (c) passed Part I of the Final examination.

A candidate who fails to satisfy the examiners in the two-year ancillary examination may, if his failure is not serious, be “referred” and be permitted to re-enter for that subject at the same time as he enters for Part II of the Final Examination, provided that he is otherwise qualified. A candidate who fails to reach the standard required for reference will not be permitted to enter for Part II until he has passed or been referred in the two-year ancillary subject.

A candidate who enters for both ancillary subjects on the same occasion, or for one or both ancillary subjects with Part I of the Final Examination will be credited with any subject(s) or Part in which he satisfied the examiners.

A candidate who has been “referred” in the two-year ancillary subject and enters for it concurrently with Part II of the Final Examination will be credited with either of the examinations in which he passes.

The standard reached by the candidate in Part I of the Final Examination will be taken into consideration for the Award of Honours.

EXEMPTIONS

1. A Graduate of this University or a candidate who has passed or been credited with a subsidiary subject for the B.A. Honours or B.Sc. Special Degree under the old Regulations, may apply for exemption from examination in the corresponding one- or two-year ancillary subject.

2. Candidates who are exempt from examination in the Two-year Ancillary subject or in both Ancillary subjects may apply for permission to complete the examinations necessary for the award of the B.Sc. Special degree in Geology after a further interval of two academic years.

SYLLABUSES

Final Examination in Geology Part I

(Four 3-hour written papers, and two practical examinations each of three hours.)

- (i) *Physical Geology*. Principles governing the structure of the earth's crust and the development of its physical features.
The interior of the earth.
- (ii) *Stratigraphy*. The stratigraphy (historical geology), structure and morphological evolution of the British Isles.
- (iii) *Mineralogy and Petrology*. The properties, diagnostic characters, relationships, modes of occurrence and origin of the chief rock- and vein-forming minerals.
Classification and description of igneous, sedimentary and metamorphic rocks; their occurrence and origin.
The economic importance of the rocks and minerals studied.
- (iv) *Palaeontology*. The morphological characters of the more important genera of invertebrate evolutionary history within the larger groups of the invertebrates.
Stratigraphical palaeontology.

Practical Work

Interpretation of the geological maps, including graphical methods and the drawing of sections.

The systematic description and determination of minerals and rocks in hand specimens and under the microscope.

The study of fossils and faunal assemblages.

Candidates must bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidate's original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution must include in their note-books a statement as to how they carried out their practical work.

Final Examination in Geology Part II

Candidates must take Section A and *either* Section B *or* Section C **and must state, when applying for approval of candidature, which section they select.**

The examination in each section consists of two 3-hour written papers and two practical examinations, each of three hours. In addition, candidates may be examined orally, at the discretion of the examiners, on their laboratory and field work.

Section A—Physical, Stratigraphical, Structural and Economic Geology

The nature and origin of the external form of the lithosphere. The exploration of the earth by geophysical methods.

The principles of Stratigraphy ; the geological history of the British Isles in relation to the wider background of Europe ; the geological history of the better known extra-European areas.

Structural Geology and the internal structural features of rocks.
The economic applications of geology.

Section B—Crystallography, Mineralogy and Petrology

The crystallography of minerals in relation to their internal structure.

Detailed study of the rock-forming minerals and of the minerals of economic importance.

Igneous, metamorphic and sedimentary rocks ; their origin, classification and interrelationships.

Section C—Palaeontology

Morphological and stratigraphical palaeontology of the invertebrates and the more important vertebrates and fossil plants. Palaeontological methods of investigation.

Palaeoecology. Systematic palaeontology.

Palaeontological evidence for evolution.

Economic Palaeontology. The history of palaeontological research.

Practical Work

The subjects of the Part I examination taken to a higher standard.

Candidates requiring additional guidance on the requisite training in practical field geology should apply to the External Registrar.

Candidates must bring to the practical examinations their *original* laboratory note-books, together with a record of their field training, for inspection by the examiners. The field record must include a piece of field work done by the candidate, which should preferably be geological mapping on the scale of 6 inches to 1 mile. A critical report upon material collected in the field work may be submitted as evidence of field investigation. Field work done in collaboration with others is admissible, but the candidate must clearly indicate the share for which he or she is responsible.

The note-books, field maps and reports should, if possible, be certified by a teacher as being the candidate's own work. Candidates not in attendance at a teaching institution are required to submit a statement as to how their practical and field work has been carried out.

Account will be taken of the laboratory and field work of the candidates in determining their class of Honours.

Anthropology Ancillary to Geology

As for Anthropology Ancillary to Psychology, *see* pp. 1356-7.

Biology Ancillary to Geology

One Year

As for Biology One-year Ancillary to Chemistry, *see* pp. 1320-21.

Two Year

As for One Year, treated in greater detail.

Botany Ancillary to Geology

As for Botany Ancillary to Geography, *see* pp. 1332-4.

Chemistry (One-Year) Ancillary to Geology

As for Chemistry Ancillary to Statistics, *see* pp. 1377-8.

Chemistry (Two-Year) Ancillary to Geology

[Two 3-hour written papers and one 6-hour practical examination.]

Physical Chemistry

Thermodynamic concepts. H and U as functions of state. First Law. Thermochemistry. Hess's law.

Second Law. Reversibility, irreversibility and equilibrium. Carnot's cycle. S , A and G defined : dS , dA and dG in reversible or irreversible changes. Criteria of equilibrium.

Phase equilibria in one component systems.

Ideal solutions. Raoult's law phenomena : molecular weights from vapour pressure depression, freezing point, depression and boiling point elevation. Osmotic pressure phenomena (not the mechanism of osmosis), molecular weights of large molecules by osmotic pressure.

Systems of many components. Chemical potential. Equilibrium and chemical potential. Homogeneous gas equilibria. Homogeneous equilibria, including ionic equilibria, in solution. Heterogeneous equilibria.

Kinetic order of homogeneous chemical reaction ; distinction from molecularity. The rate constant : its dependence on temperature. The idea of activation. Homogeneous catalysis and illustrations of the mode of action of catalysts. Heterogeneous catalysis (descriptive).

Inorganic Chemistry

The naturally occurring hydrocarbons, water gas, producer gas and coal gas.

General principles of the methods used in the extraction of the metals from oxides and sulphide ores.

Free energy changes in such processes.

Effect of pressure on chemical equilibria and reactions.

Purification of metals. Corrosion of metals (Fe and Cu).

The Strassfurt and Dead Sea salt deposits treated from the point of view of the Phase Rule.

Crystallographic structure of alkali halides, graphite, oxides and sulphides. The structure of the silicates.

General account of the structure of alkali halides, graphite, oxides and sulphides. The structure of the silicates.

General account of the structure of metals—the metallic bond.

General chemistry of some of the less common elements—*e.g.*, beryllium, titanium, vanadium, tungsten, molybdenum, gold and platinum.

The rare earths.

Practical Work

Volumetric analysis.—Standardisation of apparatus and weights. Acidimetry. Iodimetry and oxidation reduction processes. Determination volumetrically of iron, tin, calcium, copper.

Gravimetric analysis.—Determination of SO_4 , Cl , Pb , Sn , Al , SiO_2 . Dry assay of tin (Au and Ag).

Qualitative analysis of appropriate simple mixtures.

Preparations.—A few typical compounds should be prepared.

It is desirable that a few physical exercises should be undertaken, *e.g.*, determination of pH, Phase Rule, study of a binary system PbSn. Transition points.

Practical Examination

Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates must provide themselves with Platinum wire and foil and further may bring into the examination room, for use in the examination, prepared crucibles with a note of their approximate weight. No other chemical apparatus may be introduced into the examination room.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents, Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge ; centrifuge tubes ; water bath with cover pierced to take centrifuge tubes ; two long dropping pipettes ; micro burners ; wash bottles 100 cc. Polythene squeezing type ; crucibles 25 mm. and 15 mm. ; spotting tiles (porcelain) and microscope slides ; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in., and block to hold these and centrifuge tubes ; rack for dropping pipettes ; long thin spatula ; Whatman papers (No. 120), 2 in. squares ; small porcelain dish ; forceps and tube holders ; Anti-bumping tubes to fit in centrifuge tubes ; small conical flask 10 ml. ; pyrex tube fitted for testing evolved gases ; reagents ; strong acids in Jena T.K. bottles ; other common reagents in bottles fitted with dropping pipettes.

Geography (One-Year) Ancillary to Geology

[One 3-hour written paper.]

1. Introduction to regional method with special attention to climate, soils and vegetation, with specific regional examples.

2. Regional geography of the British Isles. Map interpretation in relation to the regional geography of the British Isles.

[*Note.*—Ability to read maps is required in connection with each of the above sections.]

Geography (Two-Year) Ancillary to Geology

[The syllabus and examination will be identical with that for the B.Sc. General Examination for External Students.]

The examination will consist of two 3-hour written papers, and a written examination of not more than six hours on practical work, and of inspection by the examiners of the note-books and any other evidence of his practical work in the field that the candidate may desire to submit.

No candidate will be allowed to pass unless he satisfies the examiners in the practical part as well as in the theoretical part of the examination, nor unless the original note-books or other evidence of practical work in the field reach an adequate standard.

Paper 1. Europe (including British Isles) and the Mediterranean lands of Africa and Asia.

Paper 2. (a) One of the following areas, selected by the candidate :—

- (i) Asia, excluding the Mediterranean lands.
 - (ii) North America.
 - (iii) Africa, south of the Mediterranean lands.
 - (iv) South America.
 - (v) Australia, New Zealand, and the Pacific Islands.
- (b) General Physical Geography.

(Candidates must state, when applying for approval of candidature, which Area they select for Paper 2.)

SYLLABUS

Regional Geography. The relief and land-forms in relation to the structure and climate. The distribution of soils and minerals. The river systems. Climate and weather conditions. The neighbouring seas and oceans, and their influence on the lands and their inhabitants. The distribution of natural vegetation, cultivated products, and animals. The sources of mechanical power. The distribution of industries as related to the foregoing physical factors. Trade centres and trade routes ; the character of the trade. The distribution of population ; the chief racial, religious and linguistic characteristics of the people. A synthetic study of geographical regions. States and the interrelations of political, economic, and physical conditions.

General Physical Geography. A broad knowledge of the physical geography of the world to serve as a basis for the study of regional geography.

The earth as a planet ; its movement and relation to the sun ; the consequent distribution and seasonal variation of insolation over the earth's surface.

The atmosphere. Distribution and periodic variation of the pressure and temperature of the air, of air movements and wind systems, of humidity and precipitation ; climate types and regions.

The oceans. Form of sea and ocean beds. Temperature and salinity of oceans and seas ; wave and tidal movements and their effects ; ocean circulation, its origin and effects.

The lands. General classification of the materials of the earth's crust—sedimentary, igneous, and metamorphic rocks ; crustal movements—the normal cycle of erosion and its principal interruptions ; processes of denudation and deposition ; chief effects of glaciation ; development of river systems.

Practical Work

I. Representation and interpretation by maps and diagrams : (a) land forms ; (b) their development ; (c) their relation to structure ; (d) their influence on human geography. Candidates will be expected to have done field work on these topics and to be familiar with maps of the Ordnance Survey, Geological Survey and the International 1 to 1 million map.

II. Principles of Surveying, including an elementary knowledge of the following instruments : prismatic compass, plane-table, clinometer, aneroid barometer, chain, theodolite.

The principles of the following map projections :—Conical with one or two standard parallels, Boone, polyconic, international, sinusoidal, Mollweide, Mercator, zenithal equidistant, zenithal equal area, and

zenithal orthomorphic or stereographic. Candidates are expected to know the principle underlying each projection, its defects, and its suitability for particular purposes or areas.

Construction and interpretation of weather and climate maps. The cartographic and diagrammatic representation of geographical data.

Mathematics (One-Year) Ancillary to Geology

As for Mathematics Ancillary to Chemistry, *see* pp. 1322-3.

Mathematics (Two-Year) Ancillary to Geology

As for Pure Mathematics at the B.Sc. General Examination, *see* p. 1361.

Physics (One-Year) Ancillary to Geology

As for Intermediate Examination in Science, *see* pp. 1361-3.

Physics (Two-Year) Ancillary to Geology

As for B.Sc. (General), *see* pp. 1363-5.

Zoology Ancillary to Geology

As for Zoology Ancillary to Botany, *see* p. 1314-6.

MATHEMATICS

(Note.—Examinations under the old regulations will be held for the last time in 1954, with an additional examination in *Advanced Subjects* only in 1955.)

Candidates for the B.Sc. Special degree in Mathematics under the revised regulations must have satisfied requirements (a), (b) and (d) under the general heading "Qualifications for Admission" (page 1302) and under requirement (c) must have passed in

- (i) Pure Mathematics
- (ii) Applied Mathematics
- (iii) A third Intermediate Science subject.

Candidates who qualified under (c) by means of a Higher School Certificate or General Certificate of Education may count Physics in place of Applied Mathematics and candidates who obtained a Higher School Certificate with Pure and Applied Mathematics as one subject and attained a standard therein equivalent to "very good" may count as their second and third subjects any other two which are equivalent to Intermediate Science subjects.

The examination consists of eight papers, four in Pure Mathematics and four in Applied Mathematics.

The standard of the examination shall be such as can reasonably be attained by a student who has already obtained the required preliminary qualifications, after a course of study extending over not less than three academic years.

Candidates will not be required to satisfy the examiners in translation tests or in ancillary subjects.

THE SHERBROOKE STUDENTSHIP IN MATHEMATICS

A Sherbrooke Studentship in Mathematics will be awarded on the result of either the B.A. Honours or B.Sc. Special Examination in Mathematics.

For full particulars *see* the Scholarships Pamphlet.

SIR JOHN WILLIAM LUBBOCK MEMORIAL PRIZE

A Sir John William Lubbock Memorial Prize in Mathematics, at present valued at £30, will be awarded to the best candidate who obtains a First Class at the B.A. Honours and at the B.Sc. Special Examinations, whether Internal or External, on the recommendation of the External examiners ; provided that candidates for the External examination who, on the first day of the examination, have exceeded six calendar months' standing as students in any other University, and in such University are pursuing, or have completed, a course of study with a view to a Degree therein, shall not be eligible. Candidates sitting at Overseas Centres are not eligible.

SYLLABUS

PURE MATHEMATICS

Algebra

Properties of polynomials in one variable. H.C.F. of two polynomials ; fundamental theorem for two polynomials which are prime to one another. Theory of equations, including solution of cubic and quartic equations ; resultant of two equations. Determinants. Systems of simultaneous linear equations ; linear dependence. Definition and simple properties of matrices, with easy applications to linear transformations and quadratic forms. Signature of a quadratic form. Axioms for groups, rings and fields, with examples. Cosets of a sub-group. Homomorphism and isomorphism.

Real Variable

Definition and properties of real numbers ; Dedekind sections. General theory of limits. Continuous functions, differentiable functions, functions of bounded variation. Riemann integration. Convergence and uniform convergence of sequences, series, products and integrals ; properties of functions defined as limits. Absolutely convergent double series.

Summability of series by Cesàro's first mean. Fourier's series. Simple examples of asymptotic series.

Definition and simple properties of the *Beta*-function and the *Gamma*-function.

Properties of functions of several variables and of implicit functions. Use of Jacobians and Lagrange multipliers. Line integrals and double integrals. Differentiation and integration under the integral sign.

Simple properties of sets of points in one and two dimensions. Concept of measure.

Complex Variable

Elementary single valued and many valued functions of a complex variable. Differentiable functions. Elementary conformal transformations. Cauchy's theorem for simple contours. Theorems of Taylor, Laurent, Liouville. Evaluation of integrals and summation of series by contour integration. Rouché's theorem. Simple cases of the expression of a function as an infinite product or as an infinite series of partial fractions. Maximum modulus theorem and Schwarz's lemma.

Differential Equations

Existence theorem for the equation $dy/dx=f(x, y)$. Methods of solution of ordinary differential equations, including solution in series. Total differential equations. Simple partial differential equations of the

first order ; solutions of partial differential equations of the second order with constant coefficients, satisfying boundary conditions. First variation of a line integral.

Differential Geometry

Elementary differential geometry of plane curves. The Frenet-Serret formulae for a space curve, with applications using vectors. Elementary differential geometry of surfaces, including the theorems of Euler and Meusnier. Derivation and use of the first fundamental quadratic form. Applicability. Differential equation of the geodesics on a surface.

Algebraic Geometry

Elementary pure and analytical geometry of two and three dimensions. Inversion.

Definition and fundamental properties of plane and three-dimensional projective geometry ; use of general systems of homogeneous co-ordinates. Relation of Euclidean to projective geometry.

General theory of homographic correspondences. Projective geometry, of conics, of homographic correspondences on conics, and of systems of conics, with metrical interpretations. The relation of apolarity. Theory and applications of symmetrical (2, 2) correspondences on a conic. General theory of plane collineations ; perspective collineation ; collineations which leave a conic or a point-pair invariant ; metrical illustrations.

Projective geometry of quadrics ; simple properties of pencils and ranges of quadrics ; definition and simple properties of the twisted cubic curve, metrical applications.

Elementary line-geometry, including the properties of the linear complex, the linear congruence and the regulus ; the tetrahedral complex.

Elementary properties of plane algebraic curves ; multiple points and asymptotes ; Newton's diagram ; simple curve tracing. Unicursal curves. Use of the standard quadratic transformation $x^1 : y^1 : z^1 = ayz : bzx : cxy$.

APPLIED MATHEMATICS

Vector Algebra

Vector addition, scalar and vector products, triple scalar and triple vector product.

Moment about a point, moment about an axis, vector couple, reduction of a system of localized vectors to a vector sum at a given origin and a vector couple. Equivalence of systems. Transformation of equivalent systems, reduction of a system to a vector wrench, uniqueness of reduction. The scalar and vector invariants of the system.

Mechanics

Kinematics.—Kinematics of a particle in two and three dimensions ; accelerations in cylindrical and spherical polar co-ordinates. Kinematics of a rigid body ; angular velocity vector, finite rotations, rigid body with one point fixed, general motion of a rigid body. Rates of change referred to rotating systems of reference.

General Principles.—Newton's laws of motion. Vector equations of motion of systems of particles. Integrals of energy, momentum, and angular momentum. Equations of impulsive motion.

Particle Dynamics.—Motion in a straight line ; simple harmonic motion, resisted motion, forced and damped oscillations. Motion in two dimensions ; elliptic harmonic motion, simple pendulum, central orbits including inverse square and cube laws of force. Motion in three dimensions ; conical pendulum, oscillations about a state of steady motion.

Rigid Dynamics.—Equations of motion of a rigid body, moments and products of inertia, parallel axes theorems ; principal axes.

Two-dimensional problems ; motion about a fixed axis, continuous and impulsive motion parallel to a fixed plane.

Three-dimensional problems ; use of moving axes ; motion of sphere on plane (no rotating axes), Euler's equations, motion of tops (precession, oscillations about steady precessions), (Lagrange's method may be used).

Analytical Dynamics.—Configurational co-ordinates. Classification of dynamical systems. Lagrange's equations for holonomic (with applications) and non-holonomic systems, conservative systems, stability of equilibrium, small oscillation about equilibrium, normal co-ordinates, Lagrange's equation of impulsive motion. Kelvin's and Bertrand's theorems. Hamilton's canonical equations. Principles of least action and least time. Hamilton-Jacobi equation.

Theory of Vibrations and Waves.—Vibrations of a stretched string, wave motion, progressive, standing and simple harmonic waves, reflection at a discontinuity, normal modes and normal functions, Fourier's series.

Vector Field Theory

Scalar and vector functions of position. Grad, div. and curl in terms of the vector operator ∇ . Elementary algebra of the operator ∇ . Expressions in orthogonal curvilinear co-ordinates. Theorems of Gauss, Green, and Stokes. Determination of vector field in terms of sources and vortices.

Hydrodynamics

Velocity, acceleration and pressure fields. Equation of continuity. Euler's equations of motion, Bernoulli's equation. The vorticity vector. Circulation. Vortex filaments. Irrotational motion, velocity potential. Steady flow in two dimensions—the stream function, simple application of complex potentials, including Blasius' theorem. Irrotational motion in three dimensions due to sources, sinks, doublets, and line sources. Images, flow past a sphere. Surface waves, group velocity.

Electricity and Magnetism

The electrostatic field. Distribution of sources and sinks giving rise to elementary line and surface discontinuities. Conductors, capacity, Gauss's flux theorem, simple applications. Energy in electrostatic field and forces on bodies in field. Coefficients of potential, capacity, and induction. Dielectrics, polarization theory, including Poisson's transformation. Simple electrostatic fields in two and three dimensions—images, use of conformal transformation, induction problems, introduction of zonal harmonics.

The magnetostatic field, interaction of two small magnetics, induced magnetism.

Electric currents, linear conductors, Ohm's law, Kirchhoff's laws, simple networks. Current density vector, analogy between problems

of steady current flow and those of electrostatics. Magnetic field of currents ; field of straight and circular currents, magnetic flux, magnetic energy of currents, coefficients of self and mutual inductance, mechanical forces on conductors carrying currents, $c \text{ curl } H = j$. Electromagnetic induction, Faraday's law, simple A.C. circuits, generalisation to $c \text{ curl } E = B$. Units. Necessity for displacement currents, Maxwell's equations.

Poynting vector, plane electromagnetic waves in dielectric and conducting media, reflection and refraction at a single plane interface, rectangular wave guide.

Statistics

Introduction to scope, material and method of statistical investigation. Sampling and the function of probability theory in relating sample and population.

Methods of measuring variation ; frequency distributions, including the binomial, Poisson, and normal distributions with examples of their use.

Correlation and regression for two variables.

Method of Least Squares.

Standard errors ; the simpler tests of significance.

PHYSICS

[Note.—*The examination in ancillary Mathematics will be held for the first time in 1954 ; for Part I of the Final Examination in 1955 and for Part II in 1956. Examinations under the old Regulations will be held up to and including 1956.*]

1. Candidates for the B.Sc. Special Degree in Physics under the revised Regulations must have satisfied requirements (a), (b) and (d) under the heading "Qualifications for Admission" (p. 1302), under requirement (c) must have passed in :—

either (i) Physics ; (ii) Mathematics (Pure and Applied) ; (iii) Chemistry ;

or (i) Physics ; (ii) Pure Mathematics ; (iii) Applied Mathematics ; (iv) Chemistry ; in which case the following standards will be accepted in *either* Applied Mathematics *or* Chemistry :—

- (i) Ordinary Level of the General Certificate of Education ;
- (ii) A School Certificate recognised by the Ministry of Education with a Credit in the subject ;
- (iii) Subsidiary Subject standard of a Higher School Certificate ;
- (iv) a pass at the London Matriculation examination with the appropriate subject.

and must satisfy the examiners in the following examinations :—

- (i) A written test on translation into English of scientific texts in *two* of the following languages : French, German, Russian.

The test may be taken at any time at which an examination is held and the tests in the two languages need not be taken on the same occasion. The use of dictionaries will be allowed.

(ii) An examination in ancillary **Mathematics**.

The examination will be of a standard such as could be reached by a full-time student one year after obtaining the preliminary qualification, and should normally be taken at the end of the first year of the degree course.

(iii) **Part I** of the Final Examination in Physics.

The examination will be of a standard such as could be reached by a full-time student two years after obtaining the preliminary qualification, and no candidate will be admitted until the necessary two years have elapsed.

(iv) **Part II** of the Final Examination in Physics.

To be taken not less than one year after the candidate has satisfied the examiners in Ancillary Mathematics and in Part I. The standard will be such as could be reached by a full-time student after a three-year course and should normally be taken at the end of the third year.

2. Candidates who enter on the same occasion for examination in Ancillary Mathematics and Part I of the Final, and who pass in only one of these examinations, will be credited with the examination in which they have passed.

EXEMPTIONS

A candidate who has obtained the B.A. or B.Sc. General degree of this University with both Pure and Applied Mathematics, or the B.A. Honours or B.Sc. Special degree in Mathematics of this University will be exempt from examination in Ancillary Mathematics.

SYLLABUSES

Candidates who are not pursuing a regular course of instruction for this degree at a teaching institution are advised to apply to the External Registrar for further advice and information.

Final Examination in Physics—Part I

There will be five three-hour written papers and two practical examinations, each of six hours. One practical examination will require the performance of an experiment of a routine character ; the other an experiment of the nature of a problem.

Dynamics.—Candidates will be expected to be able to apply the principles of dynamics of particles and rigid bodies which are included in the 1st year syllabus in Mathematics ancillary to Physics.

Dimensions of physical quantities and dynamical similarity.

Gravitation.—Potential, field, Gauss' theorem, Laplace's equation, Poisson's equation. Accurate measurement of the acceleration due to gravity (g) and the gravitational constant. Variation of g over the earth's surface, the measurement and the practical importance of this variation.

Elasticity.—Stress and strain, elastic co-efficients and elastic moduli. Elastic energy. Simple examples of bending beams, torsion of a right circular cylinder ; helical springs. Measurement of elastic constants. Elastic vibrations of loaded springs and beams. Elastic limit, plastic deformation. Production and measurement of high pressures.

Surface Tension.—Differential equation for the equilibrium of liquid surfaces and its application in simple cases. Dependence of surface tension on temperature, free and total surface energy, surface tension

of solutions, adsorption, monolayers on liquid surfaces. Measurement of surface tension and angle of contact. Surface waves.

Flow of Fluids.—Streamline motion, vortex motion, turbulent motion. Equation of motion of non-viscous fluids, gravity waves, Bernoulli's theorem and applications. Viscosity, Newtonian and non-Newtonian fluids. Flow of fluids through tubes, Reynolds' number, Stokes' law. Dependence of viscosity on temperature and pressure.

Sound.—Free and forced vibrations, resonance, damping, Holmholtz resonators. Wave propagation, phase and group velocity, calculation and measurement of the velocity of sound in solids and fluids. Stationary waves, normal modes of vibration. Transverse vibrations of strings, longitudinal vibrations of rods and gas columns. Energy and momentum of waves. Sound intensity and its measurement. Acoustic impedance, sound filters, sound absorption and its measurement. Thresholds of audibility. Fourier analysis and sound spectra. Elements of architectural acoustics. Production and use of ultrasonic waves.

Heat.—Temperature and its measurement. Calorimetry. The methods used to determine the main thermal constants, e.g., co-efficients of expansion, specific heat, latent heat, mechanical equivalent of heat, thermal conductivity of solids, liquids and gases, and the results obtained. Differential equations of heat flow and of diffusion with simple applications.

Volume, pressure and temperature relations of gases, vapours and liquids. Critical phenomena. Liquefaction and solidification.

Kinetic Theory.—Elements of the kinetic theory of matter including Maxwell's distribution law in its theoretical and experimental aspects, viscosity, thermal conductivity and diffusion in gases. Production and measurement of low pressure. Elementary kinetic theory of electrons in metals, Wiedemann—Franz law. Brownian motion, distribution of particles under gravity and centrifugal forces. Osmosis, osmotic pressure and its measurement.

Thermodynamics.—Mathematical development of thermodynamics. Equilibrium, first and second laws, internal energy, enthalpy, entropy, Helmholtz and Gibbs functions. Application of thermodynamics to physical systems undergoing change. Equations of state, latent heat equations, vapour pressure equation. Joule-Kelvin effect. Liquefaction of gases. Adiabatic demagnetisation and the production of very low temperatures. Nernst's heat theorem. Voltaic cells. Thermoelectricity. Thermionic Emission.

Radiation and Quantum Theory.—Kirchhoff's law. Radiation pressure Stefan's law, Wien's law, Planck's law, experimental verifications. Elements of the theory of specific heats of solids and gases, experimental verification.

Propagation of Light.—Velocity of light by optical methods. Huygens principle, superposition of wave trains. Phase and group velocities.

Geometrical Optics.—Fermat's principle. Spherical mirrors. Formation of focal lines by reflection at concave spherical surfaces, by refraction at one of more plane surfaces and by thin lenses. Magnification and dispersion of prisms. Determination of refraction indices of solids and liquids.

Lens systems, cardinal points. Stops. General survey of lens aberrations, the sine condition. Theory of optical instruments, eyepieces, photographic lenses, telescopes, microscopes.

Illumination and Photometry.—Light sources. Illumination and brightness, Lambert's law. Photometric measurements. Brightness of images.

Spectroscopy.—Spectroscopy in the ultra-violet, visible and infra-red regions, sources and instruments. Elements of spectrophotometry. Doppler effects and their detection.

Interference.—Two-beam systems. Division of wave front : methods of Young, Fresnel, Lloyd, Billet ; Rayleigh refractometer, Michelson stellar interferometer. Division of amplitude : thin films, wedges, Newton's rings, Brewster fringes, Jamin interferometer ; Michelson's interferometer with its modifications and applications, Fizeau fringes and applications. Blooming of lens surfaces.

Multiple-beam systems. Derivation of Airy's formula for the intensity distribution, Fabry-Perot interferometer, Lummer plate interferometer.

Diffraction.—Fresnel zones, Fresnel integrals, Cornu spiral. Rectilinear propagation. Fresnel diffraction at straight edge, narrow slit, narrow obstacle, circular hole, disc. Fraunhofer diffraction ; single slit, multiple slits, missing spectra. Gratings, grating mountings, echelon gratings, chromatic resolving power.

Babinet's principle, coronae. Rayleigh scattering. Resolving power of telescope, microscope, spectroscope. Abbe theory of microscope.

Polarisation and Double Refraction.—Production and analysis of polarised light ; Huygens construction for uniaxial crystals. Interference phenomena with uniaxial crystals using "parallel" and "convergent" polarised light. Rotation of plane of polarisation, polarimeters. Elements of magneto-optics. Kerr effect and its applications.

Electromagnetic Theory.—Application of electromagnetic theory to isotropic dielectrics, proof of laws of reflection and refraction, Fresnel's equations, polarisation by reflection, total internal reflection, elementary theory of dispersion.

Optics of Moving Media.—Aberration, Fresnel dragging coefficient, Michelson-Morley experiment.

Electrostatics.—Gauss' theorem and applications. Equations of Laplace and Poisson, principle of superposition, coefficients of potential, capacity and induction, method of images.

Dielectrics : relation between induction, intensity and polarisation, boundary conditions, energy density of field, method of images in simple cases, measurement of dielectric properties, molecular theory of dielectrics. Piezo-electricity.

Instruments : theory of the quadrant electrometer and its use in simple measurements of static charge and of very small currents, descriptive treatment of Compton, Lindemann and string electrometers, electroscope, electrostatic voltmeters and their use, measurement of atmospheric electric field.

Magnetism.—Parallel treatment, where relevant, to that given under electrostatics ; measurement of magnetic fields including the earth's field.

Dia-, para- and ferro-magnetism. Measurement of susceptibility. Hysteresis, derivation of expression for energy dissipation ; demagnetisation, elementary treatment of properties of magnetic materials.

Steady Currents.—Electromotive force, minimum heating theorem, Kirchhoff's laws and their application to simple networks, sensitivity of

Wheatstone bridge, resistance measurements, temperature coefficient of resistance, potentiometer measurements.

Electromagnetism.—Equivalence of current and uniform magnetic shells, interaction of magnetic field and currents, field due to current in coils of simple shape. Ampere's circuital relation, laws of electromagnetic induction, calculation of self and mutual inductance in simple cases, growth and decay of current in L.C.R. circuit, oscillatory circuits, energy of current in magnetic field, mutual energy of two currents, magnetic circuit.

Galvanometers : theory of galvanometer, damping, factors governing its sensitivity, measurement of current and quality sensitivity, flux measurements, ballistic methods of comparison of capacitance, inductance and resistance.

Alternating current : circuits containing inductance, capacitance and resistance, power factor, resonance, Q-factor transformers, matching load to generator, bridge measurements for comparing L, M, C and R at audiofrequencies, shielding. A.C. instruments, eddy currents, skin effect, simple radiofrequency measurements with resonance circuits. Elements of A.C. machinery.

Characteristics and use of diode, triode, and pentode in simple circuits, e.g., power pack, detector, amplifier, oscillator, voltmeter, time base ; cathode ray tube.

Electromagnetic equations ; Maxwell's displacement current.

Electromagnetic waves : wave equation, velocity, refractive index, plane waves and their properties (non-conducting media only), Poynting's vector.

Units and dimensions : systems of units, measurement of ratio of e.m.u. to e.s.u., absolute measurements of ohm and ampere, standards.

Quantum Concepts.—Development of quantum concepts by Planck, Einstein, Bohr, de Broglie, Schrödinger ; uncertainty relations ; experiments illustrating the wave and corpuscular aspects of particles and of electromagnetic radiation.

Electronic and Ionic Physics.—Survey of experimental results leading to the theory of the electron. Experimental determination of e and e/m , variation of mass with velocity.

Ions in gases : formation and nature of ions, motion of ions in electric and magnetic fields, experimental investigation of diffusion, mobility and recombination of ions at low concentrations.

Conduction in gases : glow, spark, arc and radio frequency discharges, simple probe measurements, role of ionisation by collision, sparking potentials, ionisation and resonance potentials.

Mass spectroscopy : experimental methods, isotopes, equivalence of mass and energy, mass defect.

Extraction and expulsion of electrons from matter : photoelectric effect. Einstein's equation, its verification and determination of h/e , photocells. Thermionic emission, experimental determination of work function, space charge effects, Langmuir's law.

Atomic Physics.—Introductory : survey of experimental results and theory leading up to the Rutherford's nuclear atom and the Bohr theory.

Atomic structure : Bohr theory of circular orbits for hydrogen-like ions, finite mass of nucleus, line and continuous spectra (emission and absorption) ; concept of quantum numbers, simple Zeeman effect, descriptive account of spectra of alkali atoms (excluding hyperfine structure).

X-rays : production and properties, diffraction, Bragg's law, wavelength measurements with crystal, powder and ruled grating, Moseley's work, X-ray determination of h/e and N , simple theory of X-ray spectra (emission and absorption) scattering, Compton effect.

Nuclear Physics (excluding Cosmic Rays and Meson Physics).—Introductory : atomic mass and atomic number, stability and instability of nuclei, neutrons and protons as nuclear constituents ; equivalence of mass and energy, pair production.

Natural radio activity : nature and properties of particles and radiations emitted ; scattering and range of α -particles ; absorption of β -particles and λ -rays ; radio-active series, transformation constant, half-value period, Geiger-Nuttall relation.

Artificial transmutations : descriptive treatment of nuclear transmutations, the discovery and identification of the neutron and an accurate determination of its mass ; artificial radioactivity.

Nuclear spectroscopy : elementary α -, β - and λ -ray spectroscopy, the problem of the continuous β -ray spectrum.

Apparatus : description and elementary principles of accelerators (van de Graaff and cyclotron), cloud chamber, ionisation chamber, counter, photographic plate.

Candidates must bring to the practical examination for inspection by the examiners, their *original* laboratory note-books containing certified records of their experimental work. Each separate item of laboratory work must bear a statement of the date at which it was completed. The inspection of these records will form an integral part of the examination.

Final Examination in Physics—Part II

1. Candidates will be examined in *either*

(a) **Experimental Physics.**—Two 3-hour papers and a practical examination of 6 hours.

or (b) **Mathematical Physics.**—Two 3-hour papers and a 6-hour problem paper which may involve computations.

2. Two 3-hour written papers will be set which will be the same for both types of candidates (Experimental or Mathematical). The papers will contain a large choice of questions suitable to both.

3. The papers will be divided into two sections as follows :—

Paper I *Section A* Fundamental physical constants.
Spectroscopy.
Electromagnetic theory.
Magnetism.

Section B Acoustics and ultrasonics.
Kinetic theory and statistical thermodynamics.
Relativity.

Paper II *Section A* Physics of the solid state.
Structure of matter.
Electron physics.
Low temperature physics.

Section B Cosmic rays.
Nuclear physics.
Quantum theory (non-relativistic).
X-rays.

and candidates will be required to answer *three* questions ; not more than *two* from any one section.

Candidates must bring to the practical examination for inspection by the examiners their *original* laboratory note-books containing certified records of their experimental work. Each separate item of laboratory work must bear a statement of the date at which it was completed. The inspection of these records will form an integral part of the examination. Candidates taking option (b) Mathematical Physics may bring to the 6-hour problem examination records of any work they may have carried out.

Translation Test

One paper of one and one half hours in each language.

Mathematics Ancillary to Physics

(Two 3-Hour Papers)

Algebra.—Linear equations. Determinants. Linear transformations. Quadrics. Transformation to principal axes. Vector algebra.

Calculus.—Simple functions of one variable. Maxima and minima. Tangents, normals and curvature of plane curves.

Series.—Taylor's series. Use of binomial, exponential, logarithmic, sine and cosine series. Elementary Fourier series. Power series. Concept of convergence.

Plane Geometry.—Elementary properties of circle, parabola, ellipse, hyperbola. Methods of curve plotting with applications to simple well-known curves.

Solid Geometry.—Elementary properties of sphere and quadrics.

Differential Calculus.—Simple functions of two or more variables. Perfect differentials. Maxima and minima. Tangent planes and normals of surfaces. Indicatrix.

Integral Calculus.—Reduction to standard forms. Use of standard tables of integrals. Lengths of arcs of plane curves. Plane areas. Areas and volumes of surfaces of revolution. Centroids. Moments and products of inertia. Probability Integrals. Simple multiple integrals, including change of variables.

Complex Variable.—Argand diagram. Exponential values of sine and cosine. Demoivre's theorem. Hyperbolic functions.

Differential Equations.—Linear equations of the first order with variable coefficients. Linear equations with constant coefficients. Linear partial differential equations with constant coefficients and two independent variables.

Numerical and Graphical Methods.—Approximate solution of equations. Approximate quadrature.

Dynamics.—Motion of a particle, including damped harmonic motion. Orbits under central forces. Conservation of energy and angular momentum. Principles of rigid dynamics. Introduction to normal modes of vibration.

PSYCHOLOGY

(Note.—Examinations under the old regulations will be held for the last time in 1955.)

1. Candidates for the B.Sc. Special degree in Psychology under the revised regulations must have satisfied requirements (a), (b) and (d) under the general heading "Qualifications for Admission" (page 1302);

under requirement (c) must have passed in any three Intermediate Science subjects and must satisfy the examiners at the following examinations :—

(i) A written test on translation into English of scientific texts in *either French or German*.

The test may be taken at any time at which an examination is held. The use of dictionaries will be allowed.

(ii) An examination in Ancillary subjects in :—

(a) Any *one* of the subjects :—**Anthropology, Biology, Chemistry, Economics, Mathematics, Physics, Physiology, Sociology, Statistics, Zoology**, which should normally be taken at the end of the first year of the degree course.

(b) A *second* subject selected from the list of subjects in (a) above which should normally be taken at the end of the second year of the degree course.

The standard expected in these Ancillary subjects will be that normally attained by a full-time student after courses of one and two years respectively.

Any pair of subjects may be chosen, and either may be selected for study to the higher standard, except that **Biology** may not be taken with **Physiology** or with **Zoology**, and a candidate will not be permitted to take as a one-year Ancillary Subject any one of the three subjects which he passed at the Intermediate Examination (or accepted equivalent) in order to satisfy the Qualifications for Admission.

(iii) **Part I** of the Final Examination in Psychology.

The examination may be taken not earlier than two years after the completion of the Preliminary Qualification, and will consist of four written papers and a practical examination of not more than six hours.

Candidates will be required to submit certified records of the laboratory work which they have carried out during their course, for inspection by the Examiners.

(iv) **Part II** of the Final Examination in Psychology.

The examination may be taken not earlier than one year after the candidate has satisfied the Examiners in Part I and in the Ancillary Subjects, but a candidate who has failed in the Two-Year Ancillary Subject only may be admitted.

The examination will consist of four written papers and a practical examination of not more than six hours. Candidates will be required to submit certified records of the laboratory work which they have carried out during their course, for inspection by the Examiners.

2. A candidate who enters for examination on the same occasion in both Ancillary Subjects and who passes in one subject but fails in the other will be credited with the subject in which he passes.

3. A candidate who enters for examination on the same occasion in one or both Ancillary Subjects and in Part I of the Final Examination and who passes in one or both subjects or in Part I will be credited with the subject(s) or Part which he passes.

4. A candidate who enters for examination on the same occasion in one or both Ancillary Subjects and in Part II of the Final Examination and who passes in the Ancillary Subject(s) but fails in Part II will be credited with the subject(s) in which he passes.

5. A candidate who enters for examination in one or both Ancillary Subjects with Part II of the Final Examination and who passes Part II but fails in the Ancillary Subject(s) will receive no report on the Part II

examination, but will be permitted to re-enter for examination in the subject(s) in which he failed.

6. For use in the practical examinations in Psychology, candidates are permitted to bring in note-books containing mathematical formulae.

7. All answers to examination questions shall be written in English unless instructions are given to the contrary.

EXEMPTIONS

1. A candidate who has passed an Intermediate or Preliminary Examination of this University in a subject additional to the three required in the Qualifications for Admission may apply for exemption from examination in the corresponding One Year Ancillary subject.

2. A graduate of this University and a candidate who has passed or been credited with a subsidiary subject for the B.A. (Honours) or B.Sc. (Special) Degree under the Old Regulations, may apply for exemption from examination in the corresponding Two-Year Ancillary subject.

SYLLABUSES

Final Examination Part I

Part I of the Examination will consist of four written papers and a practical examination. The written papers will be : General Psychology I, Experimental Psychology I, Comparative Psychology I and History of Psychology.

The General paper will contain questions on any topic within the scope of a comprehensive general course in psychology, including the relevant experimental work. The paper on Experimental Psychology I will deal with those matters usually dealt with in standard text-books on the subject, including a study of work on conditioned reflexes and its bearing on general psychology. Comparative Psychology I will consist of two parts, (a) Animal Psychology and (b) Psychology of Childhood. Both parts will presuppose acquaintance with such parts of the sciences of biology, physiology and statistics as may be relevant to the topics included in the paper. The paper on History of Psychology will consist of two or more parts. The first part, which will be compulsory, will presuppose general acquaintance with the main stages in the history of Psychology from the period of ancient Greek thought to the end of the nineteenth century. The other parts, from which option may be made, will require more specialized knowledge of some period or movement in the history of psychological thought or in the development of scientific method in psychology.

The practical examination may include questions on any topic forming part of a general laboratory course in psychology. The candidate may be examined orally or in other ways.

Final Examination Part II

Part II of the Examination will consist of four written papers and a practical examination. The written papers will be : General Psychology II, Experimental Psychology II, Comparative Psychology II and an Essay Paper.

The papers on General and Experimental Psychology II will deal with the subject matter of Part I carried to a more advanced stage. Comparative Psychology II will consist of two parts, (a) Abnormal Psychology and (b) Social Psychology and the Psychology of Primitive Peoples. The section on Abnormal Psychology will presuppose knowledge not only of the functional disorders in mental processes, but also of those

disturbances in function for the organic basis of which there is physiological and anatomical evidence. The section on Social Psychology and the Psychology of Primitive Peoples will presuppose knowledge of the statistical and experimental methods of Social Psychology and of the principles of Anthropology. The Essay paper will require either one or two essays on subjects to be selected from any part of the syllabus for the whole examination.

The Practical examination in Part II will consist of questions which require more advanced experimental and statistical methods than those in Part I, and the candidate may be required to plan and in part carry out an investigation of a research character requiring the adaptation of laboratory methods to problems not usually included in a laboratory course. He may also be examined orally or in other ways.

Translation Test

One paper of one and one-half hours in each language.

Anthropology Ancillary to Psychology

The syllabus and examination papers will be identical with those set for the B.Sc. General examination in Anthropology.

Zoological.—Man's place in nature as evidenced by the study of comparative anatomy and physiology ; special attention being paid to the group anthropomorpha.

Palaeontological.—The antiquity of man is evidence by fossil and semi-fossilized remains.

Physiological and Psychological.—A comparative study of the bodily functions and mental processes ; special attention being paid to the comparative study of the senses.

Ethnological.—A comparative study of the physical characters which distinguish the various races and sub-races of men. Classification of the human race in accordance with physical characters. Geographical distribution of races, etc., and the influence of environment on physique.

Archaeological.—The antiquity of man as revealed by the earliest remains of his handiwork. The prehistoric periods, their characteristics, sequence, and duration. The survival of early conditions of culture in later times.

Technological.—The comparative study of arts and industries, their origin, development, and geographical distribution.

Sociological.—Comparative study of social phenomena and organization. Birth, education, marriage, and death customs and systems. Tribal and other associations, government and laws. Moral ideas and codes. Magical and religious practices.

Linguistic.—Elementary comparative study of language.

Ethnological.—Comparative study and classification of peoples, based upon cultural conditions and characteristics. Influence of environment upon culture.

Candidates taking Anthropology as a One Year Ancillary subject will be examined on one paper only and may choose *either*:—

- (i) Social Anthropology.
- or (ii) Racial Evolution and Variation.
- or (iii) Cultural Evolution in Prehistoric Europe and the Near East.

(Candidates must state, when applying for approval of candidature, which paper they select.)

Candidates taking Anthropology as a Two-Year Ancillary subject may choose any two of the following papers :—

- Social Anthropology.
- Racial Evolution and Variation.
- Cultural Evolution in Prehistoric Europe and the Near East.
- Primitive Technology.
- Ethnography of a Special Area.

Areas approved for selection are :—

- (a) Eastern Africa.
- (b) Central Africa.
- (c) Western Africa.
- (d) Southern Africa.
- (e) America north of Mexico—Amerindian and Eskimo cultures.
- (f) India (tribal cultures).
- (g) South-eastern Asia.
- (h) Pacific Islands (Melanesia, Polynesia and Micronesia).
- (i) Australia and New Guinea.

Candidates are strongly advised not to offer Ethnography of a special area unless they are also offering Social Anthropology.

(Candidates must state, when applying for approval of candidature, which paper they select.)

Biology Ancillary to Psychology

Syllabus as for Biology Ancillary to Chemistry, see pages 1320-21.

Candidates taking Biology as a One-Year Ancillary subject will take one written paper and one three-hour practical examination.

Candidates taking Biology as a Two-Year Ancillary subject will be examined on the same syllabus studied in greater detail and will take two written papers and a practical examination not exceeding six hours.

Chemistry (One-Year) Ancillary to Psychology

Two written papers and a three-hour practical examination.

[The syllabus and the examination will be identical with that for the Intermediate Examination in Science for External Students.]

The following outline is not to be regarded as a rigid syllabus, but is given in continuation of the General Certificate of Education (Ordinary level) syllabus, for the general guidance of candidates, to indicate the range of the written part (I) and the experimental part (II) of the examination in Chemistry.

The whole syllabus is to be treated in an elementary manner and as far as possible experimentally. More importance will be attached to a sound understanding of fundamental principles and standard experimental methods than to an acquaintance with advanced theoretical ideas.

I

The laws of chemical combination. History of the discovery of the composition of air and water. The atomic and molecular theories. Equivalent, atomic, and molecular weights and methods for determining them. Valency. Atomic structure in so far as it is necessary to explain simply (a) the different types of valency, and (b) the periodicity in the properties of the elements of atomic number 1 to 18.

The periodic classification of elements, as illustrated by the chemistry of : H, He, Ne, A, Li, Na, K, Cu, Ag, Be, Mg, Ca, Sr, Ba, Zn, Cd, Hg, B, Al, C, Si, Sn, Pb, N, P, As, Sb, Bi, O, S, Cr, F, Cl, Br, I, Mn, Fe, Co, Ni. The treatment of the descriptive chemistry should be extended to include the preparation and properties of the more important compounds of : H, B, C, N, P, As, O, S, Cl, Br, I, Na, K, Cu, Ag, Mg, Ca, Ba, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe.

[" Important compounds " here means (a) compounds in common laboratory use for work up to Intermediate standard, or (b) compounds which have well-known uses.]

Sources and common processes for the manufacture or production of : H, He, Ne, A, O, N, Cl, Br, I, C, P, S ; Na, Cu, Ag, Mg, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe, Ni. (A knowledge of metallurgical and other manufacturing operations will not be required except in broad outline.) Common processes for the manufacture of the following materials : Na_2CO_3 , NaHCO_3 , NaOH , CaO , SO_2 , H_2SO_4 , NH_3 , HNO_3 , HCl , hypochlorites, chlorates, bleaching powder, CO_2 , and the fuel gases.

The chemistry involved in inorganic qualitative and volumetric analysis (*see* Part II).

The chemistry involved in the detection of C, H, N, Cl, Br, I, and S, in organic compounds. Calculation of empirical and molecular formulae from experimental data.

Elementary principles of Organic Chemistry including the following :—The quadrivalence of carbon and its power of forming stable bonds with non-metals and especially with itself. Relationship of structural formulae (excluding, except as mentioned below, the stereochemical aspect) of saturated open-chain hydrocarbons containing not more than 4 carbon atoms. Homology, Isomerism. Candidates should be able to give examples of structural isomerism, and should know why plane formulae are not universally acceptable, but they are not expected to be familiar with the formulae or behaviour of specific mirror-image or geometrical isomerides.

Typical properties conferred by substituents, emphasis being laid on the behaviour of groups rather than on the technique of preparation or recognition of individual substances. Nevertheless certain simple substances (mentioned below in parentheses) should be included among those selected as types ; candidates will be expected to be familiar with the usual origin or method of preparation and characteristics of these compounds. Substitution in saturated open-chain hydrocarbons (methane) by chlorine. The radicals $\text{C}_n\text{H}_{2n+1}$. Reactions of compounds $\text{C}_n\text{H}_{2n+1}\text{Cl}$ (Br or I) with alkali and ammonia. Alcohols of the general formula $\text{R}\cdot\text{CH}_2\cdot\text{OH}$ (methyl and ethyl alcohols), $\text{R}_2\text{CH}\cdot\text{OH}$, $\text{R}_3\text{C}\cdot\text{OH}$, and their behaviour towards sodium, phosphorus halides (or phosphorus together with halogens), hydrogen halides, oxidising agents, and dehydrating agents, including sulphuric acid. Formation of ethers (diethyl ether). Unsaturated hydrocarbons, C_nH_{2n} (ethylene). Addition of H_2 , Cl_2 , Br_2 , and HBr to olefins. Action of alkali on the products formed from olefins by addition of Cl_2 or Br_2 (acetylene). The carbonyl group in aldehydes, $\text{R}\cdot\text{CHO}$, and ketones, R_2CO (formaldehyde, acetaldehyde, acetone). The action of reducing and oxidising agents on these substances, and the addition of HCN to them. Monobasic carboxylic acids, $\text{R}\cdot\text{CO}_2\text{H}$ (formic and acetic acid). Reaction of acids with PCl_5 (acetyl chloride) and the behaviour of acid chlorides with water, alcohol, and ammonia. Esterification of acids (ethyl acetate) and the behaviour of esters towards acids, alkalis, and ammonia. Acid anhydrides (acetic anhydride), amides (acetamide) and their hydrolysis. Amines, RNH_2 , R_2NH , and R_3N (methylamine, dimethylamine, trimethylamine).

Modifications of group function as illustrated by the following : Difference in the properties dependent on the group OH in alcohols and in acids. Differences exhibited by the group C=O in aldehydes and ketones on the one hand, and in acids, esters, etc., on the other. Differences in the properties of the NH₂ group in amines and amides.

The elementary principles of Physical Chemistry, which will find illustration throughout the subject matter of the syllabus. The following topics should be included among those studied :—The properties of gases : The laws of Boyle, Charles, Avogadro, Gay-Lussac, and Graham, and the law of partial pressures. Difference of specific heats of gases at constant pressure and at constant volume. Ratio of the specific heats and its connection with atomicity treated empirically. Determination of molecular weights of gases and vapours. Thermal dissociation. The properties of solutions : Distribution law. Henry's law. Osmotic pressure. Proportionality of lowering of vapour pressure, raising of boiling point, and lowering of freezing point to molar concentration. Determination of molecular weights in solution. The essential differences between colloidal and true solutions. Electrolysis and electrolytic dissociation. Chemical equilibrium and simple applications of the law of mass action. Le Chatelier's principle. Solubility product. Simple treatment of the strength of acids and bases, indicators, and the hydrolysis of salts. Effect of concentration, temperature, and catalysts on rate of reaction. Exothermic and endothermic reactions. Hess's law.

II

Practical Examination

Qualitative analysis of simple mixtures of not more than four inorganic radicals. (Phosphate separations will not be required.)

Preparation and use of volumetric solutions of :—acids and alkalis, potassium permanganate, potassium dichromate, sodium thiosulphate, iodine, arsenious oxide, silver nitrate, and potassium thiocyanate.

Candidates may also be required to examine the action of heat and reagents on substances supplied and to identify well-known products including gases, produced in the reactions. The practical exercises may also include the preparation and purification of substances by methods involving solution, precipitation, crystallization, distillation, and sublimation.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners, and they may use their laboratory note-books and also any other book or books they wish during the practical examination. All book and note-books must be taken away by the candidates at the end of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

[For Semi-Micro analysis facilities, see under two-year syllabus below.]

Chemistry (Two-Year) Ancillary to Psychology

Two written papers and a practical examination not exceeding six hours.

[The syllabus and the examination will be identical with that for the B.Sc. (General) Examination for External Students.]

Candidates will be required to show a general acquaintance with the five main divisions of the subject, viz. :—

- (1) General Theoretical Chemistry.
- (2) Inorganic Chemistry.
- (3) Organic Chemistry.
- (4) Physical Chemistry.
- (5) History of Chemistry since the time of Boyle.

Also to be practically familiar with the common methods of experiment.

It is desirable that candidates should be able to translate papers on chemical subjects in French and German into English. Full marks will not be awarded if a knowledge of these languages is not shown.

Practical Examination

Candidates are required to bring to the practical examination for inspection by the examiners their *original* laboratory note-books, which may include an account of any research work in which they have participated. These note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Candidates must provide themselves with Platinum wire and foil and further may bring into the examination room, for use in the examination, prepared crucibles with a note of their approximate weight. No other chemical apparatus may be introduced into the examination room.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge ; centrifuge tubes ; water bath with cover pierced to take centrifuge tubes ; two long dropping pipettes ; micro burners ; wash bottles 100 cc. polythene squeezing type ; crucibles 25 mm. and 15 mm. ; spotting tiles (porcelain) and microscope slides ; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{1}{8}$ in. and block to hold these and centrifuge tubes ; rack for dropping pipettes ; long thin spatula ; Whatman papers (No. 120), 2 in. squares ; small porcelain dish ; forceps and tube holders ; anti-bumping tubes to fit in centrifuge tubes ; small conical flask 10 ml. ; pyrex tube fitted for testing evolved gases ; reagents ; strong acids in Jena T.K. bottles ; other common reagents in bottles fitted with dropping pipettes.

Economics Ancillary to Psychology

One and Two-Year.—As for Economics Ancillary to Geography, see page 1334.

Mathematics (One-Year) Ancillary to Psychology

Candidates will be examined on Sections (i), (ii) and (iii) of the Two-year syllabus (see below) and will take the papers I and II.

Mathematics (Two-Year) Ancillary to Psychology

[The syllabus and the examination will be identical with that for the B.Sc. (General) Examination in Pure Mathematics for External Students.]

Paper I will consist mainly of Algebra, Trigonometry, and Analytical Geometry ; Paper II of Analytical Geometry and Calculus ; Paper III of Section (iv).

The Pure Mathematics of the Intermediate Examination together with the following :—

Section (i).

Determinants of the second and third order. Partial fractions. Summation of easy series. Use of the binomial, exponential, logarithmic sine and cosine series, absolute convergence and the d'Alembert's ratio test as applied to these series. Hyperbolic functions. Exponential values of sines and cosines. Complex numbers with their representation in a plane. Demoivre's theorem and easy applications.

Section (ii).

The simpler properties of plane figures involving straight lines and conic sections treated by the methods of co-ordinate geometry (excluding the use of homogeneous co-ordinates).

Section (iii).

Simple differentiation and integration of functions of one variable. Maxima and minima of functions of one independent variable. Use of Taylor's and Maclaurin's theorems. The principle of superposition of small errors. Tangents, normals, and curvature of plane curves. Plane areas. Lengths of plane curves. Areas of surfaces of revolution. Volumes of solids of revolution.

Section (iv).

The simple properties of plane figures involving straight lines and conic sections treated by Euclidean methods.

The straight line, the plane, the sphere, the ellipsoid referred to its principal axis.

Ordinary differential equations of the first order.

Linear equations of the first and second orders with constant coefficients. Partial differentiation and simple applications.

Physics (One-Year) Ancillary to Psychology

Two written papers and a three-hour practical examination.

[The syllabus and the examination will be identical with that for the Intermediate Examination in Science for External Students.]

Candidates will be expected to show an acquaintance with the fundamental principles of mechanics up to the standard of the Ordinary level of the General Certificate of Education, and to have acquired a general knowledge of the apparatus by which the elementary principles of Physics are illustrated and applied.

General Properties of Solids, Liquids, and Gases

Relation between volume and pressure in gases. Friction and viscosity. Surface tension. Diffusion. Osmosis. Stretching of wires.

Heat

Temperature. Instruments for the measurement of temperature. Expansion of solids, liquids, and gases with rise of temperature, isothermal and adiabatic expansion. Quantity of heat. Specific heat.

Change of state. Latent heat. Vapour pressure. Boiling point. Dew-point. Formation of cloud, fog, and dew. Conduction. Definition of thermal conductivity. Convection. Radiation. Newton's Law of Cooling. The mechanical equivalent of heat and modes of determination. The conservation of energy.

Sound

The production and propagation of sound. Nature of wave-motion. Amplitude. Wave-length. Frequency. Experimental determination of the velocity of sound in air. Effect of change of temperature on the velocity. Reflexion. Determination of frequency by simple methods. Experimental investigation of the modes of vibration of strings by means of the sonometer. Experimental investigation of the vibrations of air in pipes by resonance to tuning forks. Organ pipes. Position of nodes and antinodes.

Light

Propagation of light. Laws of reflexion and defraction. Photometry. Reflexion at plane and spherical surfaces and the formation of images. Refraction at plane surfaces and by prisms. Minimum deviation. Chromatic dispersion. The general laws of radiation: visible, ultra-violet, infra-red. Emission and absorption. Heating effects of radiation. Phosphorescence and fluorescence. The formation of images by single lenses. Long and short sight and their correction by lenses. The combination of two lenses to form a simple telescope or microscope. Measurement of velocity of light. Simple properties of polarized light.

Magnetism and Electricity

Properties of magnets. Simple phenomena of magnetization. The magnetic field: lines of force. The law of magnetic force. Magnetic moment. Intensity of magnetization. The earth as a magnet. The magnetic properties of iron and the elementary laws of the magnetic circuit. The simpler phenomena of electrified bodies. Conduction and insulation. Electrification by friction and by induction (influence). Distribution of electrification on conductors. Electric field: strength of field. The law of electric force. Potential. Capacity. Energy of charge. Electroscopes and electrometers. Electric current. Magnetic field of current. Magnetic measurement of current. Galvanometers. Work done by an electric current. Electromotive force. Difference of potential. Resistance. Ohm's Law. Wheatstone's Bridge. Potentiometer. Resistance of cells. Volt. Ohm. Ampere. Ammeters. Voltmeters. Heating effects of currents. Elementary phenomena of electrolysis: Faraday's Law. Voltmeters. Primary and secondary batteries. Action on current circuits in a magnetic field. Electromagnetic induction: Faraday's Law; Lenz's Law; induction coil. A thermo-electric couple. Simple phenomena of discharge in gases.

Practical Examination

(The following scheme is not exhaustive, and is intended merely to show the general nature of the exercises at the practical examination. The examiners are not precluded from setting other exercises and practical problems illustrative of the principles set forth in the syllabus.)

Measurements of length, mass and time, involving eye-estimation of tenths of a division, use of vernier, use of the balance (weighing to one centigram), use of a seconds-hand watch. Determination of volumes. Specific gravities of solids, powders, and liquids. Use of the hydrometer. Verification of Boyle's Law. Determination of the centre of gravity of a plate. Determination of g by simple pendulum.

Determination of velocity of sound in a tube by resonance with a fork. Use of the sonometer. Use of thermometers and determination of fixed points. Simple methods of determining specific heat and latent heat of fusion and evaporation. Determination of dew-point. Use of simple photometers. Focal lengths of mirrors. Focal lengths of lenses. Arrangement of two lenses to make simple forms of telescope, microscope, and projection lantern. Simple use of spectrometer. Tracing the path of a ray of light through a block of glass and deduction of refractive index. Refractive index by method of apparent thickness. Tracing the lines of force in the neighbourhood of a magnet. Comparison of magnetic moments and fields. Measurement of resistance of wires and cells. Comparison of electromotive forces with potentiometer. Measurement of electro-chemical equivalent.

Candidates are required to bring to the practical examination for inspection by the examiners their *original* laboratory note-books which must be taken away at the close of the examination.

These note-books must contain a certificate by the teacher, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Physics (Two-Year) Ancillary to Psychology

Two written papers and a practical examination not exceeding six hours.

[The syllabus and the examination will be identical with that for the B.Sc. (General) Examination for External Students.

Questions will be set involving (1) translation of French and German passages and (2) answers in regard to the subject-matter thereof. Without answering the questions set in both these languages a candidate cannot make up the full number of questions to be answered.

The subjects for the Intermediate course, with the addition of the following, the whole being treated theoretically as well as experimentally.

General Physics

Fundamental notions of mass and force. Motion in a circle. Simple harmonic motion. Combinations of simple harmonic motions. Kinetic energy and work. Moment of inertia. Kinetic energy of a rotating body. Rolling bodies. Torsional vibration of a body. Torsion balance. Compound pendulum and its applications. Gravitational constant and its determination. Young's modulus. Simple rigidity. Compressibility. Friction. Viscosity of liquids and gases. Surface tension. Diffusion. Osmotic pressure.

Sound

Distribution of velocity and pressure in sound waves. Experiments on the velocity of sound in gases. Calculation of velocity from elasticity and density. Fundamental tone and overtone of strings and air columns. Quality of sound. Longitudinal vibrations of rods. Determination of frequencies. Diatonic scale. Temperament. Effect on pitch due to motion of the source, of the receiver, and of the medium. Resonance. Forced and free vibrations. Reflection of waves. Stationary waves. Simple cases of interference of sound. Beats.

Heat

The methods which have been used to determine the most important thermal constants and the chief results which have been obtained. Volume, pressure, and temperature relations of gases, vapours, and liquids. Critical state. Solidification and liquefaction. Elements of kinetic theory of gases. The laws of thermodynamics. Isothermal and adiabatic changes in gases. Specific heats at constant pressure and constant volume and their relations. Carnot's cycle. Efficiency of reversible engines. Entropy. Thermodynamical scale of temperature. The laws of radiation: Stefan's Law. Distribution of energy in the spectrum. Applications to the measurement of temperature.

Light

The eye as an optical instrument. The cardinal points of combinations of two thin separated lenses. Qualitative study of focal lines. The optical principles of microscopes, telescopes, spectrometers, and sextants. Achromatic combinations. Methods of observation of infra-red and ultra-violet spectra. The wave theory. Explanation of reflection and refraction. Simple cases of interference of light. Diffraction by slits and gratings. Resolving power of simple lenses. Polarization by reflection and refraction. Double refraction. Nicol's prism. Coloration of thin crystalline plates in parallel pencils between polarizer and analyser. Rotation of the plane of polarization.

Magnetism and Electricity

The methods of determining magnetic declination, dip, and horizontal force. Magnetic properties of iron and steel. Permeability. Hysteresis. The effects of temperature. The magnetic circuit. Paramagnetism and diamagnetism. Theory of electrical condensers of simple geometrical forms. Specific inductive capacity and its measurement. Simple electrometers. Theory of attracted disc and quadrant electrometers. Accurate measurement of current, resistance, and electromotive force. Absolute measurements. Self and mutual induction. Simple alternating currents. Impedance. Electrical oscillations. The relation between electrostatic and electromagnetic units. Platinum thermometer. Bolometer. Theory of voltaic cells. Conduction in electrolytes. Thermo-electricity. Peltier and Thomson effects. Ionization and electrical conduction in gases. Elementary theory of electrons, determination of the ratio of charge to mass and of the velocity for the case of the cathode stream. X-rays. Properties of the rays emitted by radioactive bodies.

Practical Examination

The following scheme is not exhaustive, and is intended merely to show the general nature of the exercises at the practical examination. The examiners are not precluded from setting other exercises (including such as may be given at the Intermediate) and practical problems illustrative of the principles set forth in the syllabus.

Use of the accurate balance with the various corrections. Calibration of a tube by means of a liquid. Determination of specific gravities. Determination of Young's modulus for a given wire by stretching and for a rod by bending. Determination of simple rigidity. Measurement of surface tension. Determination of the acceleration due to gravity by simple and compound pendulums. Use of sonometer to determine frequencies. Determination of velocity of sound by Kundt's tube.

Coefficient of thermal expansion of liquids and solids. Expansion of air at constant pressure. Increase of pressure of air at constant volume. Specific heat by method of mixture and by method of cooling. The laws of cooling. Determination of latent heat of water and steam. Measurement of vapour pressure. Estimation of dew-point. Measurement of conduction of heat along rods of metals and through slabs of bad conductors. Measurement of focal lengths of mirrors and lenses and of their combinations. Determination of magnifying power of combinations of lenses. Use of spectrometer. Determination of refractive index of solids and liquids. Measurement of wave-lengths by gratings. Polarization of light by reflection and measurement of polarizing angle. Comparison of magnetic moments. Measurement of horizontal components of magnetic fields. Measurement of dip. Absolute measurement of current by galvanometer of known radius in a given field. Measurements with electrometers. Standardization of a galvanometer by electrolysis. Verification of Joule's Law of the heating effect of current. Comparison of resistances. Comparison of electromotive forces by the potentiometer. Use of ballistic galvanometer. Comparison of capacities of condensers.

Candidates must bring to the practical examination their practical note-books which must contain a certificate by their teachers, if any, that the work is the candidates' *original* experimental work carried out in the laboratory for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Physiology (One-Year) Ancillary to Psychology

Two written papers and a three-hour practical examination.

[The syllabus and the examination will be identical with that for the Intermediate Examination in Science in General Physiology for External Students.]

The following outline is not to be regarded as a rigid syllabus but is given for the guidance of candidates as indicating the range of the theoretical and the practical part of the examination :—

1. The fundamental phenomena of life.
2. The cell. Differentiation of structure and function of cells. Cell division.
3. Elementary biophysics including surface tension, diffusion, osmosis, cell permeability and the colloidal state.
4. Elementary chemistry of proteins, carbohydrates and fats ; their origin, fate and significance in living matter.
5. Source and transformation of energy in living organisms. The relation between mechanical, chemical and thermal changes.
6. Enzyme action.
7. An elementary knowledge of mammalian physiology along the following lines :—
 - (a) The properties of muscle.
 - (b) Chief constituents of blood and their functions.
 - (c) General arrangement of the circulatory system. The heart and blood vessels and their control.

- (d) Mechanism of respiration, the control of pulmonary ventilation and gaseous interchange.
- (e) Secretion, digestion and absorption.
- (f) Principles of nutrition and metabolism.
- (g) Excretion. The formation and composition of urine.
- (h) Reproduction.
- (i) Chemical co-ordination and internal secretion.
- (j) Nervous co-ordination. General arrangement of the nervous system and a brief survey of the functions of its different parts. Reflex action.
- (k) The general principles of sensation.

Practical Examination

Candidates will be expected to have made a practical study of the following :—

1. Elementary experiments illustrating the phenomena and laws dealt with in the theoretical course.
2. The properties of skeletal muscle.
3. Factors influencing the heart beat, e.g., temperature, ions, electrical stimulation, exercise. Experiments on blood pressure in man.
4. Factors influencing pulmonary ventilation in man. Oxygen capacity and hæmoglobin content of blood.
5. Simple experiments on hydrogen ion concentration and "buffering."
6. Experiments on the chemical properties and the digestion of the foodstuffs.
7. Detection of the chief constituents of urine. Estimation of urea.
8. Experiments on the field of vision, the "blind spot" and accommodation of the eye.
9. Staining and mounting of paraffin sections and the fixing and staining of fresh tissues. The recognition of the chief tissues and organs of the mammalian body.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Physiology (Two-Year) Ancillary to Psychology

Two written papers and a practical examination not exceeding nine hours.

[The syllabus and the examination will be identical with that for the B.Sc. (General) Examination for External Students.]

Candidates who propose to offer Physiology as a Two-Year Ancillary Subject will be required to satisfy the University that their proposed course of study and previous training in the subject are adequate.

Each application will be considered on its merits and candidates must submit the necessary information when applying for approval of candidature. Such information should be detailed and must include a statement as to whether their course is or has been pursued in a laboratory or institution registered under Act 39/40, Vic., Cap. 77, under teachers holding licences under the same Act.

Application of physico-chemical laws to physiological processes. Surface tension and surface phenomena. Diffusion. Osmosis. Properties and functions of cell membrane. Cell permeability. The properties of colloidal solutions. The Donnan equilibrium.

Chemical constitution and properties of proteins, lipides and carbohydrates. Composition of tissues and body fluids.

Catalysis in biological processes. Enzymes : classification, composition and characteristic features.

Sources and transformation of energy in living organisms. Relation between chemical, mechanical and thermal changes. Work and efficiency.

Blood ; structure, composition, formation and destruction ; respiratory functions and buffer mechanisms. Immunity. Blood grouping. Lymph, tissue-fluid and cerebro-spinal fluid.

Anatomy of the heart and general arrangement of the circulatory system. The properties of cardiac muscle. Origin, transmission and control of the heart beat. Pressure changes and time relations in the cardiac cycle. Blood pressure and blood flow throughout the vascular system, and their nervous and chemical control.

Mechanics of respiration. Gaseous interchange. Control of pulmonary ventilation. Effects of depth and altitude. Circulatory and respiratory changes in exercise.

Mechanism and control of the secretion of digestive juices. Composition of juices. Digestion and absorption of foodstuffs. Movements of the alimentary tract.

Metabolism. Exchanges of matter and energy. Nitrogenous equilibrium. Intermediate metabolism of protein, fat and carbohydrate.

Regulation of body temperature. Functions of the skin.

Nutrition. Dietary requirements at different ages and under different conditions. Mineral metabolism. Vitamins : origin, properties and functions. Tissue oxidation.

Endocrine organs : functions and inter-relationships. Chemical constitution of hormones.

Excretory organs. Functions of the kidney. Composition and formation of urine. Micturition.

Reproduction. Development and functions of sex organs. Ovulation and spermatogenesis. Fertilization. Formation and functions of the placenta. Development of mammary glands. Parturition and lactation.

The physiology of striated muscle, smooth muscle and nerve. Excitation. The nerve impulse and its transmission centrally and peripherally.

General anatomy and functions of the nervous system in man :—origins, destinations and functions of the fibre tracts of the cerebro-spinal axis. Reflex action. Maintenance of tone and posture. Special functions of the brain stem, cerebellum and basal ganglia. Cerebral cortex, including functional localization and conditioned reflexes.

Sense organs : structure and function.

The autonomic nervous system.

Practical Work

A practical examination not exceeding (a) three hours in Histology and (b) six hours in Physiology, Experimental and Chemical.

Histology, including the staining and mounting of paraffin sections of the different organs of the body to show general structure and the various tissues of which they are composed. The preparation from fresh material of suitably stained permanent specimens of the elementary tissues including blood, lymph and marrow, nerve cells and nerve fibres. The staining of specimens of the spinal cord and medulla to show nerve fibres and nerve cells.

Animal experiments. Experiments on the frog muscle-nerve preparation which illustrate the physiological properties of muscle and nerve. The properties of cardiac muscle, and the initiation and control of cardiac rhythm in the frog. Study of the mammalian heart by perfusion of the coronary circulation. The properties of smooth muscle as shown by the intestine and uterus. Suitable experiments to illustrate the action of hormones.

Experiments on the human subject. Blood counts and colour index. Blood-grouping. The adaptability of the circulatory and respiratory systems to changed conditions, including experiments on circulation in the skin. Metabolism, metabolic rate, work. Factors influencing the flow and composition of urine. Reflex time. Experiments on eye: visual acuity, accommodation, measurement of blind spot, field of vision, binocular vision, colour vision, etc. Experiments on hearing and equilibration.

Chemical physiology. Qualitative tests which illustrate the properties of carbohydrates, lipides and proteins in food and animal tissues. Separation and estimation of fats, carbohydrates and proteins in foods and tissues. Experiments to illustrate the action and properties of enzymes. Quantitative work on enzymes. Digestion: test meals, qualitative and quantitative experiments on digestive juices. Urine chemistry; qualitative tests for and estimation of the main constituents. Experiments on tissue oxidation.

Blood: coagulation, spectroscopic analysis, preparation of derivatives of haemoglobin. Estimation of haemoglobin, oxygen capacity, percentage oxygen saturation and carbon dioxide content. Estimation of (blood constituents such as) sugar, urea.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. In the Chemical Physiology part of the practical examination candidates may make use of their note-books in carrying out any practical test which they may have to perform. Note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Sociology (One-Year) Ancillary to Psychology

Either Social Philosophy, as for B.A. Honours in Sociology (1 paper):

Ethics as applied to problems of social organization. Rights and Duties. The theory of justice, distributive and corrective. Responsibility.

Liberty and Equality. The ends and limits of political action. Compulsion and consent. Ethical aspects of Marriage and the Family. Ethical aspects of Property. Ethical aspects of the relation between States.

Or General Sociology (1 paper) :

The analysis of social structure in terms of social institutions and social groups. Examination and classification of the main types of institution and groups : i.e., the major social controls (law, custom, morals, religion) ; methods of enforcement (justice and punishment) ; the institutional basis of authority and power (political, economic, familial) ; property ; national and local communities ; social stratification (social class, caste, slavery) ; the main types of association ; the family and the primary group. The processes of social change.

(Candidates should state, when applying for approval of candidature, which option they select.)

Sociology (Two-Year) Ancillary to Psychology

Two of the following papers set in option A at the B.A. Honours in Sociology:—

PAPER (1) SOCIOLOGY : THEORIES AND METHODS

The development of Sociology since Comte. Biological factors in social life. Problems of heredity and environment : studies of twins, foster children and orphans ; distribution and trend of intelligence ; the social use of intelligence ; genetic and social aspects of race problems. The role of psychology in sociological explanation : the study of personality types in relation to social structure. The use of anthropological and historical data in sociology : the use of personal documents in sociological investigation. The value and limitations of the comparative method. The classification of social aggregates and institutions and the analysis of social processes : the concepts of social class and social status in the analysis of social structure. The concepts of culture and civilization. Theories of social development, arrest, and decay. The nature of sociological generalizations and the methods used in testing them.

PAPER (2) STATISTICAL METHODS IN SOCIAL INVESTIGATION

1. *Elementary Statistical Methods*.—Collection, definition and tabulation of data. Approximations and error. Frequency groups, time series and graphical representation. Measures of average and dispersion. Index numbers. The elements of the analysis of time series. The elementary theory of regression and correlation. Sampling of proportions. Samplings for Totals and Averages from a normal population. Elementary theory of sampling design. Stratification.

2. *Sources of Social Statistics in the United Kingdom*.—Population and vital statistics. Man-power. Health and housing. Education. Crime. Nutrition. Cost of living. The nature and limitation of these statistics and the application of elementary statistical methods to them.

PAPER (3) SOCIAL INSTITUTIONS I

PAPER (4) SOCIAL INSTITUTIONS II

(The paper on Social Institutions II will be devoted mainly to the more complex societies.)

(i) The main forms of family structure : the family and the kindred ; maternal and paternal descent ; the joint family ; regulation of marriage.

(ii) Types of political structure ; the clan and tribe ; monarchy ; feudalism ; the City State ; the forms of the modern state.

(iii) Forms of aggregation : urban and rural developments. Patterns of urban life.

(iv) Development of social control : Retaliation and the Blood Feud ; the growth of public justice and rational procedure ; individual and collective responsibility ; punishment and the prevention of crime.

(v) The form of property and economic organization : common, collective and private property, and their interrelations.

(vi) Social differentiation : slavery and serfdom ; nobility ; caste ; the main varieties of modern class structure.

(vii) Religion and other beliefs in their bearing on social relations ; relation of religion and morals.

(viii) Relations between intellectual development as seen in the control of natural forces and social change ; levels of social development.

PAPER (5) ETHICS

(i) The psychological presuppositions of ethics ; impulse, desire and will. The moral sentiments.

(ii) The principal types of ethical theory : the intuitionist, rationalist and empiricist approach to ethical problems. The theory of evolution applied to morals.

(iii) The relations of sociology to ethics. The problem of moral progress.

PAPER (6) SOCIAL PHILOSOPHY

Ethics as applied to problems of social organization. Rights and Duties. The theory of justice, distributive and corrective. Responsibility. Liberty and Equality. The ends and limits of political action. Compulsion and consent. Ethical aspects of Marriage and the Family. Ethical aspects of Property. Ethical aspects of the relation between States.

PAPERS 8 AND 9 (*To be offered together*)

either MODERN ENGLAND (two papers)

(i) *Social Structure*

The recruitment, distribution and composition of the population. Households and families. Family characteristics. Family and poverty.

The education process. Ability and opportunity. The changing structure of education.

The entry to employment. The recruitment of the professions. Occupational and social mobility. The structure of occupations. Occupation status and levels of living. The Government in relation to levels and standards of living.

Groups—religious, professional and others. The relation between group and community. Social stratification and group consciousness.

(ii) *Social History*

The social development of industrialism since 1815.

The Sources and Character of Industrial Progress.—The social background of technical developments ; the rise of the factory system and industrial concentration and combination : the growth of capital and the adaptation of labour ; mass production and new forms of private enterprise ; the growth of public enterprise ; the growth of capital, the agencies of capital formation and the historical problems associated with them ; the new systems of communication ; the functions of the State in economic development ; the changing forms of property.

The Growth of Towns.—The historical problems of urbanization and suburbanization ; immigrant communities and their control ; the rise of town planning and the development of new branches of urban administration ; the growth of urban amenities and the provision for leisure and common enjoyment.

The Class Structure of Industrialism.—The growth and distribution of the population ; the displacement of the landed aristocracy and the growth of the middle classes ; the changing status of the working classes ; occupational specialization, the growth of the professions, and the definition of new occupations ; the family in urban and rural communities ; the economic and social status of women ; the smaller family and the treatment of children ; the shorter working day ; the growth and distribution of the national income ; the change in standards of living ; the evolution of working-class needs ; the development of the agencies of thrift.

The Growth of Democracy.—The redistribution of political responsibility ; the influence of voluntary action and the rise of voluntary associations ; the scope and displacement of philanthropy ; the rise and social functions of the labour and co-operative movements ; the influence of wars on democratic development.

The Development of Social Policy.—The change in social attitudes and its influence on social policy and administration ; the history of the regulation of factories and workshops ; the problems of industrial disease and disability ; the statutory limitation of the hours of labour ; the regulation of the work of women and children ; the development of system of public education ; the improvement of health and the statutory enforcement of holidays ; the development of the system of national insurance.

Or Two papers on *one* of the following :—

- A. Some other Modern Community to be specified from time to time (2 papers as for Modern England).
- B. An Oriental Civilization, ancient, mediæval or modern.
- C. Græco-Roman Civilization.
- D. Civilization of the Middle Ages :—
 - (1) Political and Social Institutions.
 - (2) Religions and Ethics.

PAPER (10)

Either DEMOGRAPHY

Vital statistics (including biometry), sickness and mortality, reproduction rates and other measures of fertility. Enquiries by census and by sample. Population trends and projections. The history of population growth.

Or CRIMINOLOGY

Conception of crime. Functions and methods of criminology. Criminal types and causal factors in crime ; physical ; psychological ; social and economic factors. Special problems : juvenile and female delinquency.

Penal philosophy and psychology ; especially meaning and objects of punishment. Penal history. The modern English penal system and the criminal courts. Problems of crime prevention.

Statistics (One-Year) Ancillary to Psychology

One written paper and a practical examination not exceeding seven hours.

Pictorial representation of data. Principles of graph drawing. Frequency and cumulative frequency distributions, discrete and continuous. Scatter diagrams for two variables. Measurements and their errors.

Measures of average of central values and of dispersion ; their calculation. Use of simple sampling experiments to introduce the idea of chance variation and to illustrate the principles of choice between alternative statistical measures.

Probability as related to a limiting proportionate frequency. Addition and multiplication of probabilities. Independence. The binomial distribution (proof and applications). Poisson's limit to the binomial (applications). The normal curve (properties and applications).

Illustrations of the meaning of randomness ; the random sequence ; random sampling with reference to experiments in the field. Interpretation of departures from the binomial and Poisson forms of distribution.

Bivariate tables. Correlation and linear regression.

The χ^2 goodness of fit test and its applications. Statistical significance. Interpretation of 2×2 tables.

Sampling distributions illustrated by sampling experiments. Knowledge of the standard errors of such distributions and how to use them. The simple tests of significance, using t and the variance ratio (applications and use of tables, but no mathematical derivation).

Elements of analysis of variance and planning of experiments.

Candidates will be required to bring to the practical examination for inspection by the examiners their note-books recording such statistical work as they may have done. These note-books must be taken away by the candidates at the close of the examination.

Statistics (Two-Year) Ancillary to Psychology

Two written papers and a practical examination not exceeding seven hours.

As for One-Year Ancillary and, in addition :—

Expectation technique required for the derivation of the sampling moments of statistics. The derivation of sampling distributions, including that of χ^2 in goodness of fit tests.

Further practical and theoretical development of the methods of analysis of variance, the planning of experiments in the field, including the collection of data, Randomized blocks and Latin squares, analysis of regressions. Elementary treatment of partial and multiple correlation.

Least square theorems. Applications of orthogonal polynomials to trend fitting. Elements of dosage-mortality technique. Simple methods of discrimination.

The normal bivariate surface (properties and applications). The log-normal distribution. Elementary ranking theory.

Special applications to the field of the principal subject.

In both courses, the application of the statistical techniques to numerical data will be regarded as an essential part of the training.

Zoology (One-Year) Ancillary to Psychology

As for Zoology (One-Year) Ancillary to Botany, *see* pp. 1314-5.

Zoology (Two-Year) Ancillary to Psychology

As for B.Sc. (General), *see* pp. 1315-6.

STATISTICS

[NOTE.—Examinations under the Old Regulations will be held for the last time in 1955.]

Each application for registration as an External Student proceeding to the Degree of B.Sc. Special in Statistics (Revised Regulations) will be considered individually. Each candidate will be required to submit a detailed statement of his proposed course of study, his previous training and experience, and his prospective training and experience up to the date of entry to Part II of the Final Examination.

The statement submitted by the candidate should include a description of any applied statistical work which he has carried out or which he proposes to carry out privately, with copies of any non-confidential reports which he may have prepared, or statements from employers describing the scope and content of his practical experience.

Candidates for the B.Sc. Special Degree in Statistics under the revised regulations must have satisfied requirements (a), (b) and (d) under the general heading "Qualifications for Admission" (page 1302) and under requirement (c) must have passed in the subjects

- (i) Pure Mathematics, or Mathematics (Pure and Applied) ;
- (ii) and (iii) Two other Intermediate Science subjects.

1. Candidates for the degree must satisfy the examiners in the following examinations :—

- (i) A written test on translation into English of scientific texts in French or German. The test may be taken at any time which at an examination is held. The use of dictionaries will be allowed.
- (ii) An examination in an ancillary subject selected from the following list :—**Biology, Chemistry, Physics, Psychology, Zoology**, which should normally be taken at the end of the first year of the degree course. The standard of the examination shall be that which would normally be required of a full-time student after a course extending over one academic year.
- (iii) An examination in Ancillary **Mathematics** which should normally be taken at the end of the second year of the degree course. The standard of the examination shall be that which would normally be required of a full-time student after a course extending over two academic years.
- (iv) **Part I** of the Final Examination in **Statistics** to be taken not earlier than two years after the completion of the Preliminary Qualification.
- (v) **Part II** of the Final Examination in **Statistics** to be taken not earlier than one year after the candidate has (a) passed the examination in the first Ancillary Subject, (b) presented himself for examination in Ancillary Mathematics and (c) passed Part I of the Final Examination. (A candidate who has presented himself for examination in Ancillary Mathematics but has failed to pass will be permitted to re-enter for examination in this subject at the same time as he enters for Part II of the Final Examination, provided that he is otherwise qualified.)

2. A candidate will not be permitted to select for examination in the one-year Ancillary Subject any one of the three subjects which he passed at the preliminary examination for admission to the Degree.

3. A candidate who enters for examination in the first Ancillary Subject and fails may re-enter for examination at the same time as he enters for Part I of the Final Examination, or on any subsequent occasion.

4. A candidate who enters for examination on the same occasion in the first Ancillary Subject, Ancillary Mathematics and Part I of the Final Examination will be credited with the subject(s) or Part in which he passes.

5. A candidate who enters for examination in Ancillary Mathematics and Part I of the Final Examination on the same occasion and who passes Part I but fails in Ancillary Mathematics will be required to re-enter for examination in Ancillary Mathematics on a subsequent occasion and not later than his date of entry for Part II of the Final Examination.

6. A candidate who enters for examination in Ancillary Mathematics and Part II of the Final Examination on the same occasion and who passes in one but fails in the other will be credited with the subject or Part in which he has passed.

7. The Examiners shall be at liberty to test any candidate by means of oral questions.

8. All answers to examination questions shall be written in English unless instructions are given to the contrary.

EXEMPTIONS

1. A candidate who has passed an Intermediate or Preliminary Examination of this University in a subject additional to the three required for admission to the Degree, may apply for exemption from examination in the corresponding one-year Ancillary Subject.

2. Graduates of this University who have obtained the degree of B.A. Honours or B.Sc. Special in Mathematics may apply for exemption from examination in Ancillary Mathematics.

3. No exemption will normally be granted from the Translation Test, or from Part I or Part II of the Final Examination in Statistics.

SYLLABUSES

Final Examination—Part I

[Four written papers and two seven-hour practical examinations]

Preparation and discussion of statistical data, schedules of inquiry, tabulation and handling of records. Graphic representation in the case of one or two variates. Measurements and their errors.

Frequency distributions. Discrete and continuous variates ; measures of location, dispersion, skewness and kurtosis ; moments and cumulants. Normal, binomial, Poisson, multinomial and hypergeometric distributions. Heterogeneity and generalized Poisson distributions.

Correlation, regression, association and contingency. Grade and rank correlation. The bivariate normal distribution.

Derivation of standard errors and sampling distributions. The X^2 -distribution and its applications. Tests of significance.

The analysis of variance applied to single, double and multiple classifications and to simple regression. Analysis of covariance. The randomized block and Latin square. Randomization theory. Elementary design of experiments. Probit analysis. Elements of factorial design.

Least squares, the fitting of curvilinear regressions ; orthogonal polynomials.

Pearson curves and Gram-Charlier series.

Inequalities for moments. Laws of large numbers. Characteristic functions. Central limit theorems.

The elementary principles involved in the theories of estimation and testing statistical hypotheses. The concepts of efficiency, sufficiency and likelihood. Interval estimation. The Markoff theorem and linear hypotheses. The power function of a statistical test.

The elements of quality control and sequential analysis. Sampling of stratified populations.

Interpolation, quadrature and finite differences. Methods of statistical computation. Use of mechanical aids in large-scale statistical work.

Practical work.—A training in the application to numerical data of the statistical techniques outlined above must be regarded as an essential part of the course. The competence of the students in the analysis of data and in the interpretation of results will be tested in the Practical Examinations.

Essays and note-books on practical work undertaken during the course must be brought by candidates to the practical examination for inspection by the examiners.

Final Examination—Part II

[Four written papers and two seven-hour practical examinations]

Section A (one paper, to be taken by all candidates).

The treatment of split plots and confounding. The general linear hypothesis. Missing plot technique. Multivariate analysis. Discriminant functions. Effects of departure from normality on statistical tests.

Section B (two papers).

Candidates to select two out of the following subjects. Other subjects may be submitted for consideration. Each of the two examination papers will contain questions on both subjects.

- (a) Autoregression and correlogram analysis.
- (b) Special problems in the design of experiments.
- (c) Combinatory analysis.
- (d) Stochastic processes.
- (e) New developments in probability theory.
- (f) Theory of ranking.

Section C (one paper to be taken by all candidates).

Problems of Applied Statistics. Candidates will not be expected to be familiar with all the subjects listed below and wide choice of questions will be given.

The sources of official statistics, their use and interpretation. Vital Statistics. Problems in Eugenics, Biometry and Psychology. Applications in manufacturing industry.

Practical Examination

Essays and note-books on practical work undertaken during the course must be brought by candidates to the practical examination for inspection by the examiners.

Translation Test

[One paper of one and one-half hours.]

Mathematics Ancillary to Statistics

[Two papers]

FIRST YEAR*Algebra.*—Determinants. Vectors.*Calculus.*—Simple functions of one variable. Maxima and minima. Tangents, normals and curvature of plane curves.*Series.*—Taylor's series. Use of binomial, exponential, logarithmic, sine, and cosine series. Elementary Fourier series. Power series. Concept of Convergence.*Plane Geometry.*—Elementary properties of circle, parabola, ellipse, hyperbola. Methods of curve plotting, with applications to simple well-known curves.*Solid Geometry.*—Elementary properties of sphere and quadrics.*Differential Calculus.*—Simple functions of two variables. Perfect differentials. Maxima and minima. Tangent planes and normals of surfaces. Indicatrix.*Integral Calculus.*—Reduction to standard forms. Use of standard tables of integrals. Lengths of arcs of plane curves. Plane areas. Areas and volumes of surfaces of revolution. Centroids. Moments and product of inertia. Probability integrals. Simple multiple integrals, including change of variables. First variation of an integral.*Complex Variable.*—Argand diagram. Exponential values of the sine and cosine. Demoivre's theorem. Hyperbolic functions.*Differential Equations.*—Linear equations of first order with variable coefficients. Linear equations with constant coefficients. Partial differential equation of a vibrating string.*Numerical Methods.*—Newton's method of approximating to roots of an equation. Simpson's rule for quadrature.**SECOND YEAR***Algebra.*—Elementary properties of determinants of any finite order. Multiplication of determinants. Matrices and elementary matrix algebra. Rank of a matrix. Latent roots of a matrix. Reduction to canonical form in the non-degenerate case. Solution of linear equations.*Calculus.*—Functions of several variables. Taylor's series for such functions. Superposition of small errors. Stationary values of such functions and discrimination between maxima and minima. Lagrange's method of undetermined multipliers. Jacobians and their application to partial derivatives.

Multiple integrals. Change of variables in a multiple integral. Dirichlet's integrals and extensions. Use of orthogonal curvilinear co-ordinates.

Line and surface integrals. Green's theorem for two and three dimensions.

Differential equations.—Ordinary equations of the first order. One-parameter families of curves. Ordinary linear second order equations and method of solution of series. Hypergeometric equation. Simple linear partial differential equations of the first and second orders.

Special functions.—Beta and gamma functions. Hypergeometric function. Stirling's expansion of the gamma function.

Finite differences.—Applications to interpolation, summation and integration. Linear difference equations with constant coefficients.

Complex variable.—Conformal transformation. Complex integration.

Biology Ancillary to Statistics

[One written paper and a three-hour practical examination]

The syllabus is the same as that for Biology ancillary to Chemistry (see pp. 1320-21), except that para. 5 (f) should be amended to read :—

(f) The essentials of growth, development and reproduction, with special reference to growth and variability in populations and individuals.

Chemistry Ancillary to Statistics

[One paper and a practical examination not exceeding seven hours]

It is assumed that the student has studied Chemistry to the level of the Intermediate Examination in Science.

Physical Chemistry

Faraday's laws of electrolysis, Helmholtz's views on the nature of electricity and experiments on discharges in gases, leading to discovery of the electron. Mass and charge of the electron. Radio-activity. The nuclear atom. Radioactive displacement law and van den Broeck's hypothesis. Isotopes. Artificial radioactivity. Uses of isotopic indicators. Stable electron groups in atoms, ions and molecules. Electrovalency and covalency. Valency and the periodic classification.

Elementary kinetic theory of ideal gases. The gas equation. Distribution of kinetic and potential energy (without proof). Real gases. Molecular nature of gases. Intermolecular energy. Liquid-gas equilibrium from the kinetic standpoint. Molecular and ionic nature of crystalline solids. Crystallinity in artificial and natural materials of high molecular weight.

Adsorption on surfaces. Main general properties of colloids with particular reference to lyophilic colloids and including colloidal electrolytes. Ultrafiltration. Sedimentation. Semipermeable membranes : osmotic pressure (phenomenological treatment). Electro-kinetic phenomena.

Chemical equilibrium and the law of mass action (empirical treatment).

Electrolytic conduction. Faraday's laws. Specific, molar and equivalent conductance. Mobilities. Ionic conductance. Degree of dissociation. Ostwald's law and departures therefrom. Strong and weak electrolytes. Transport phenomena.

Electromotive force of cells and electrode potentials (empirical treatment). Hydrogen electrode : pH and its determination. Indicators. Buffers. Oxidation-reduction cells, potentials, and equilibria.

Inorganic Chemistry

The atmosphere—determination of carbon dioxide and water vapour—detection of ozone—separation of the inert gases—the occurrence of helium in minerals and natural gases—changes brought about in minerals by the atmosphere.

General properties of oxides, hydroxides, sulphides, halides, carbonates and sulphates of the common elements, based on the periodic classification.

Physics Ancillary to Statistics

[The syllabus and examination papers will be the same as those for Physics Ancillary to Psychology, *see* pp. 1361-3.]

Psychology Ancillary to Statistics

[Two written papers and a six-hour practical examination.]

The syllabus includes the following topics and methods in General Psychology :—

Topics.—Motivation. Emotion. Sentiments, interests and attitudes. Temperament, character and other aspects of personality. Conflict and choice. Repression. Unconscious tendencies. Cognitive processes. Perceiving, remembering, imagining and thinking. Individual differences and their assessment. Habit. Aptitudes. Skill, Conditions of work. Incentives. Fatigue and boredom. Individual development. Maturation. Learning.

Methods.—Application of scientific methods in psychology. Experimental techniques and other procedures for the systematic study of psychological phenomena in the laboratory and in the field. The use of elementary statistical procedures in psychological research.

Practical work.—Exercises in the application of methods listed above.

Zoology Ancillary to Statistics

[The syllabus and examination papers are the same as those for Zoology Ancillary to Botany, *see* pp. 1314-5.]

UNIVERSITY OF LONDON



REGULATIONS

FOR THE

M.Sc. AND D.Sc.

DEGREES

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with the special Regulations which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

MASTER OF SCIENCE (M.Sc.)**REGULATIONS FOR THE REGISTRATION OF
EXTERNAL STUDENTS FOR HIGHER DEGREES**

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma or postgraduate certificate will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry to the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee, provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and withdraws, fails or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required to cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted. A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed in the Regulations, obtain the necessary entry papers, and return them to the University with the examination fee.

FEES						£	s.
Registration Fee	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	2	2

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the examination each candidate must (a) have taken the Degree of Bachelor in this University not less than two academic years previously (in exceptional cases this interval may be reduced); (b) have been registered as an External Student preparing for the M.Sc. Examination at least twelve months before the last date of entry, or, if qualifying by means of the B.Sc. Special Examination (see below), six months before the last date of entry to such examination; and (c) if proceeding to the M.Sc. Examination in one of the following subjects, have complied with other requirements, namely :—

(i) in Mathematics, have obtained the B.Sc. Special or B.A. Honours Degree in Mathematics with First or Second Class Honours, or have passed a special qualifying examination unless specially exempted therefrom (in determining the nature of this qualifying examination regard will be paid to the candidate's academic record and to the subjects which he proposes to offer for the M.Sc. Degree; but it will normally consist of the whole or selected papers of the B.Sc. Special Examination in Mathematics).

(ii) in Biochemistry, have obtained the B.Sc. Special Degree in Chemistry with Honours and with a biological subject as a subsidiary or as a two-year ancillary; or the B.Sc. Special Degree in a biological subject with Honours and with Chemistry as a subsidiary or as a two-

year ancillary subject ; or, in the case of candidates who cannot produce satisfactory evidence of having attained this standard, have passed such qualifying examinations as may be prescribed by the University.

(iii) in Statistics, have produced evidence satisfactory to the University that he has reached the standard of the B.Sc. Special Examination in Statistics ;

(iv) in Geography, have obtained the B.A. Honours or B.Sc. Special Degree in Geography, or Honours at the B.Sc. General Examination or First or Second Division at the B.A. General Examination with Geography as one of the subjects, or have specially qualified at the B.Sc. Special Examination by taking four papers (to be selected by the University in relation to the branch of study to be offered), reaching Second Class Honours standard therein, or produce evidence satisfactory to the University that he has reached an equivalent standard in Geography.

(v) in Biophysics, have obtained the B.Sc. Special degree in Physics with Honours and with a biological subject as a subsidiary or as a two-year ancillary ; or the B.Sc. Special Degree in a biological subject with Honours and with Physics as a subsidiary or as a two-year ancillary subject ; or the B.Sc. General Degree, with Honours, in Physics and a biological subject ; or, in the case of candidates who cannot produce satisfactory evidence of having attained this standard, pass such qualifying examinations as may be prescribed by the University.

A candidate who has not obtained the Degree of B.Sc. of this University will be required, unless specially exempted, to pass a qualifying examination.

2. Candidates who have taken the M.A. Degree in Mathematics or in Psychology or in Geography will not be permitted to proceed to the corresponding M.Sc. Degree.

3. Candidates for the M.Sc. Degree in History and Philosophy of Science are permitted to enter for Part I or Part II one year after graduation, though they may not enter for the remaining part until two years after graduation.

4. Candidates who have obtained the M.Sc. Degree in one subject may enter again in another subject on complying with the regulations in all other respects.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the fourth Monday in May, or if that day be Whit Monday on the following Tuesday, but in the History and Philosophy of Science, the examination shall commence on the fourth Monday in September of each year.

ENTRY TO EXAMINATION

1. The candidate list closes on 1 February, except in the case of Mathematics, for which examination it closes on 1 January, and in the case of History and Philosophy of Science, for either part of which examination the list closes on 1 June. Any External Student duly registered for the M.Sc. Examination may make his entry at any time during the six weeks preceding the several dates specified above ; no entries can be accepted after the closing of the candidate list.

2. Every candidate when making his entry must forward the original copy of the approved syllabus. The two copies of the dissertation and/or thesis, where required, must be bound in accordance with the regulations

obtainable from the External Registrar and must reach the University not later than 1 March, but if a dissertation is submitted for the examination in History and Philosophy of Science it should be forwarded to the External Registrar not later than 1 September.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.	d.
M.Sc. Examination	15	15	0
M.Sc. in History and Philosophy of Science, each Part	7	17	6
M.Sc. in History and Philosophy of Science—			
Re-presentation of dissertation	3	13	6

A candidate required to take a preliminary qualifying examination before proceeding to the M.Sc. will be charged the following fees :—

(a) If the qualifying test consists of part of the whole of an existing examination, £2 2s. per paper or practical examination taken up to a maximum of the total examination fee.

(b) If the qualifying test consists of a special *ad hoc* examination, £5 5s.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 15 April, or in the case of the examination in the History and Philosophy of Science 1 August, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. x).

SCHEME OF EXAMINATION

1. Except in the case of the M.Sc. Degree in Geography or History and Philosophy of Science or Mathematics, for which detailed regulations are set out on pages 1406-1409, there are no prescribed subjects or syllabuses for the M.Sc. Degree, and candidates are required to proceed in accordance with the following regulations.

2. Not less than one year before he desires to enter for the examination the candidate shall submit for the approval of the Council for External Students the title of the subject in which he proposes to present himself, together with a statement of the proposed method of treatment. Applications must be submitted in duplicate on the prescribed form and must include a clearly stated syllabus of the subject.

3. The Council's approval of title and the approved syllabus of the subject, whether in their original or in an amended form, will be communicated to the candidate in writing, and on this the examination will be based. This syllabus of the subject must be sent to the University when the candidate makes his entry.

4. The examination shall be by the following tests :—(a) written papers, (b) an oral examination, (c) a practical examination, (d) a dissertation ; or such of them as may be determined by the Council in each case. All candidates, except those for the M.Sc. in Mathematics by written papers, will be required to take the oral examination.

5. Candidates will be informed at the time when their syllabus is approved whether or not they will be required to present a dissertation, but only after they have made entry to the examination will they be informed what papers and practical examination they will be required to take. Except in such cases as the University shall determine, candidates for the M.Sc. Degree in Chemistry will be required to offer a dissertation, and in most cases will be required to undergo a practical examination.

6. The dissertation shall be an ordered and critical exposition of existing knowledge of the subject in which the candidate presents himself. The candidate shall be required to submit two copies of the dissertation.

7. If a candidate so desire, he may submit two copies of a thesis, which is a record of original work as part of his qualifications ; and, if the examiners upon examination of a thesis shall hold the same to be generally or specifically of such special excellence as to justify it, the candidate may be exempted by the Council from part of the examination referred to above. If a candidate submits a thesis, he will be required to forward to the University a short abstract thereof comprising not more than 300 words.

8. In support of his candidature any candidate may submit published work as subsidiary matter. He will not, however, be permitted to submit a dissertation or thesis for which a Degree has been conferred upon him in this or any other University. Nevertheless, a candidate shall not be precluded from incorporating work which he has already so submitted, in a dissertation or thesis covering a wider field, provided that he shall indicate on his entry-form and also on his thesis any work which has been so incorporated.

9. The thesis or dissertation must be written in English and a candidate who is summoned to attend an oral examination shall be required to bring with him a copy of his thesis and/or dissertation paged in the same way as the two copies submitted for examination.

10. A candidate who fails to pass the M.Sc. Examination may, if the examiners see fit, be exempted on re-entry either from presentation of the thesis or dissertation or from the written papers and the practical examination (if any). In either case the examiners may, if they so desire, examine the candidate again orally on re-entry. The fee payable by such a candidate on re-entry will be one-half the ordinary fee.

11. Candidates will not normally be permitted to re-present their theses or dissertations until one calendar year has elapsed, but the examiners may, if they see fit, recommend that a candidate be permitted to re-present his thesis or dissertation in a corrected form after a shorter interval.

M.Sc. in Education

(The M.Sc. Examination in Education has been abolished. Graduates in Science of this University may now proceed to the M.A. in Education—see Regulations for the M.A. and D.Lit. Degrees for External Students.)

M.Sc. in Geography

The examination may be with or without thesis :—

(i) *Examination without thesis.*—The examination shall be on some major aspect of Geography, or on the Regional Geography of an area of continental or sub-continental extent.

The examination shall consist of :—

- (a) The dissertation which must be an ordered and critical exposition of existing knowledge of some part of the approved subject.
- (b) Two written papers on the approved subject.
- (c) An oral examination.

The examiners may reject the candidate without holding an oral examination.

(ii) *Examination with thesis.*—The thesis must be a record of original work or other contribution to knowledge in some branch of Geography.

Conjoint work may be submitted as a thesis for the Degree, provided that the candidate shall furnish a statement, countersigned by his collaborator showing clearly his share of the conjoint work.

The examination shall consist of :—

- (a) The thesis.
- (b) A written examination consisting of one or more papers on a subject cognate to that of the thesis. The candidate will be informed of the subject in which he will be examined when his thesis subject is approved.
- (c) An oral examination, especially on the subject of the thesis. The Examiners may reject the candidate without holding an oral examination.

M.Sc. in History and Philosophy of Science

The examination shall consist of two Parts, which may be taken separately or together. Either Part may be taken first.

Part I. One paper on each of the following :—

- A (i) Early History of Science.
- and either A (ii) History of Mathematics and the Physical Sciences.
- or A (iii) History of the Biological Sciences.
- either B History of Mathematics and the Physical Sciences.
- or C History of the Biological Sciences.
- D Philosophy of Science.

Part II. E One paper on a *special subject* (to be selected by the candidate) or a dissertation in place of the paper.

F An oral examination on the branch of knowledge connected with the special subject or dissertation.

The syllabuses in the several subjects of the examination are as follows :—

PART I

(A) (i) *Early History of Science*

Antiquity :—The beginnings of Science in the early civilizations ; the Greek and Alexandrian philosophers ; Science in Roman times.

The Middle Ages :—The survival of scientific ideas in the East and their subsequent spread to the West ; Scholasticism and Science ; the forerunners of modern Science.

The Renaissance and the transition to modern times :—Naturalistic tendencies ; Philosophy and the experimental method ; foundation of the Academies.

(A) (ii) *History of Mathematics and the Physical Sciences*

The general rise and development of Astronomy, Physics, Chemistry and Geology from the middle of the seventeenth to the end of the nineteenth century. Candidates will be able to answer the full number of questions by restricting themselves to three of these sciences.

(A) (iii) *History of the Biological Sciences*

The general rise and development of biological and geological science from the middle of the seventeenth to the end of the nineteenth century.

All candidates must take A (i) and either A (ii) or A (iii). Questions in A (ii) and A (iii) will be of a more general type than those in Papers B and C.

(B) *History of Mathematics and the Physical Sciences*

The History of Astronomy, Physics, Chemistry and Geology from the middle of the sixteenth to the end of the nineteenth century and of Mathematics from the middle of the sixteenth to the end of the eighteenth century. The paper will be divided into five sections : (i) History of Astronomy ; (ii) History of Mathematics ; (iii) History of Physics ; (iv) History of Chemistry ; (v) History of Geology. Candidates will be allowed an unrestricted choice of questions, but those choosing History of Geology will not be able to answer the full number of questions without selecting questions from at least one other section.

(C) *History of the Biological Sciences*

The general rise and development of biological and geological science from the beginning of the seventeenth to the end of the nineteenth century. Questions will be set on the general history of the biological sciences, on the history of botany, geology and zoology, and on biological developments in medical science.

(D) *Philosophy of Science*

Philosophy and Science :—The methods and mutual relations of history, science and philosophy. Does the scientist adopt a peculiar view of the world, or can he accept the view of common sense ? The nature of scientific activity. The rational and empirical elements in science.

Data :—Analysis of the empirical data of the physical, biological and psychological sciences.

Consideration of the procedure followed in science. Theory of measurement. The principle of relativity in its relation to the problem of measurement.

Interpretation :—Formation of scientific concepts and theories. The functions of logic and of mathematics in the empirical sciences. Discussion and elucidation of some modern developments of the applications of non-euclidean geometry and non-commutative algebra.

Scientific Concepts and Theories

General characteristics of scientific concepts. Continuity and discontinuity, macroscopic and microscopic concepts, casual and statistical laws, probability ; principles of taxonomy, teleological laws, mechanism and vitalism in biology, the problem of the relation between biological and psychological science.

The more comprehensive scientific generalizations ; the conservation of energy and increase of entropy, the theory of relativity, quantum theory ; Mendelian genetics, the theory of evolution.

Analysis of outstanding concepts ; time, space ; the universe—its expansion and “ running down,” the ultimate particles ; the fundamental concepts of biology.

Current views and controversies in relation to the philosophy of science.

Candidates will be expected to show a clear understanding of the contents of the syllabus, and not merely a superficial acquaintance with the meaning of the terms occurring in it. They will, however, not be expected to work out detailed problems or to discuss finer points of controversy.

PART II

(E) The *special subject* may take the form either of a dissertation or of a written paper.

For a dissertation the subject selected should be of limited range, as, for instance, the work of an important investigator, the history or part of the history of an important theory, an aspect of scientific method, some philosophical implication of science, or a short historical period.

For a written paper a subject of wider range is desirable.

In neither case should the subject-matter deal with modern work except incidentally.

If a candidate should submit a dissertation which is rejected by the examiners, they may, at their discretion, recommend that the candidate be allowed to re-present the dissertation in a corrected form within a period of one calendar year from the decision of the Senate.

M.Sc. in Mathematics

The examination will consist of either (a) a dissertation with an oral examination, or (b) four written papers, two on each of two subjects selected by the candidate from the list given below and, at the discretion of the examiners, an oral examination. Each of the written papers will in the main be confined to one of the two selected subjects, but the examiners will not be debarred from setting questions on another subject which bears on the subject of the paper; one paper at least shall be common to all candidates offering the same subject. Each candidate when registering shall submit the titles of his subjects, together with a statement of the proposed method of treatment, for the approval of the University. The dissertation must be an ordered and critical exposition of some part of the approved subject.

Candidates are not precluded from submitting for approval subjects other than those set out in the printed list.

- | | |
|---|--|
| 1. Theory of Numbers. | 15. Topology. |
| 2. Theory of Functions of a Real Variable. | 16. Algebraic Invariant Theory. |
| 3. Theory of Functions of a Complex Variable. | 17. Dynamics. |
| 4. Multiple Periodic Functions. | 18. Hydrodynamics. |
| 5. Algebraic Functions and their Integrals. | 19. Thermodynamics. |
| 6. Differential Equations. | 20. Dynamical Theory of Gases. |
| 7. Calculus of Variations. | 21. Quantum Theory |
| 8. Theory of Groups. | 22. Statistical Mechanics. |
| 9. Abstract Algebra. | 23. Theory of Elasticity. |
| 10. Statistical Mathematics. | 24. General Theory of the Electro-magnetic Field. |
| 11. Finite Differences. | 25. Relativity. |
| 12. Algebraic Geometry. | 26. Mathematical Astronomy (to count as one subject or as two subjects). |
| 13. Projective Geometry. | 27. Physical and Dynamical Meteorology. |
| 14. Differential Geometry. | |

TIME TABLE

The order of the examination will be sent to candidates as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. A list of candidates who pass to the satisfaction of the examiners, arranged in alphabetical order, shall be published at the University. A mark of distinction shall be placed against the names of those candidates who show exceptional merit in Mathematics, Geography and Psychology.

2. A copy of the Pass List will be sent to each successful candidate. An individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners shall be laid before the Senate for approval in July, or in the case of the examination in History and Philosophy of Science in October.

2. A diploma for the Degree of M.Sc. under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

THESES AND DISSERTATIONS

Copies of all successful theses or dissertations, together with any subsidiary contributions submitted, will be deposited for reference in the University Library.

Any copies of theses and dissertations which are not required by the University after the examination has been completed will be returned to the candidate.

RESEARCH FUND

The Senate has at its disposal a Research Fund from which grants may be made to individuals for the provision of materials and apparatus for specific projects of research. Any External Graduate or Student for an External Higher Degree who desires to be considered as an applicant for a grant should in the first place communicate with the External Registrar.

DOCTOR OF PHILOSOPHY

Regulations for the Degree of Ph.D. are contained in a separate pamphlet, which may be obtained on application to the External Registrar.

DOCTOR OF SCIENCE (D.Sc.)

1. Every candidate for the Degree of Doctor of Science as an External Student must have obtained as an External Student in this University—

(i) The B.Sc. Degree ; and

(ii) The M.Sc. or Ph.D. Degree, in the Faculty of Science. Nevertheless, a candidate may, in exceptional circumstances, be exempted by the Senate, on the grounds of published work, from the requirement of obtaining the M.Sc. or Ph.D. Degree as an External Student.

2. A candidate for the D.Sc. Degree in the History and Philosophy of Science must have passed the M.Sc. Examination in the subject as an External Student unless specially exempted therefrom by the Senate on the ground of published work.

3. The Degree is awarded only for work of a high standard such as would give the candidate an authoritative standing in his particular line of research. The work should afford definite evidence of the candidate's ability to initiate and conduct or direct research of such a standard.

4. Candidates may make application at any time for the Degree, but they are warned that, in view of the Summer Vacation, the result of any entry submitted later than 1 May is liable to considerable delay. All candidates should give preliminary notice of intention to enter three months before sending in their entry forms.

5. Each candidate must at the same time submit evidence of his qualifications, such evidence to consist of published papers or books containing original contributions to the advancement of knowledge. A substantial amount of the work submitted must be independent work published in the candidate's own name. If conjoint work is submitted the candidate must produce satisfactory evidence as to the extent to which he was responsible for the initiation and conduct or direction of such conjoint work. The candidate is required to indicate what part, if any, of the work has been submitted for a degree in this or any other University by himself or, in the case of conjoint work, by any of his collaborators.

6. In these regulations the term "published" shall mean printed in a periodical or as a pamphlet or book on sale to the public through booksellers. The purpose of requiring publication is to ensure that the work submitted has been available for criticism by relevant experts, and examiners are given discretion to disregard any of the work submitted if, in their opinion, the work has not been so available for criticism either on account of its inaccessibility or because it has been submitted for the degree at too short an interval after its publication.

7. The Examiners may, at their discretion, require the candidate to present himself for an interview.

8. Every candidate must apply to the External Registrar for an entry form, which must be returned, duly completed, with a fee of £21 and accompanied by four copies of such printed contributions to scientific knowledge as he may desire to submit.

9. All cheques should be made payable to the University of London or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

10. A candidate who fails to qualify for the award of the Degree will be required on re-entry to comply with the regulations in force at the time of his re-entry.

11. After the report of the Examiners shall have been approved by the Senate the External Registrar shall publish a list of candidates on whom the Degree has been conferred.

12. A diploma for the Degree of D.Sc. under the Seal of the University shall be delivered to each successful candidate.

A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

UNIVERSITY OF LONDON



REGULATIONS

FOR DEGREES IN

AGRICULTURE

(Old and New Regulations)

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Revised regulations for the B.Sc.(Agric.) examination have been introduced and are set out on pp. 1531 *et seq.* Examinations under the old regulations will be held for the last time as follows :—

Intermediate Examination in Agriculture	July 1955
Final Examination (Parts I and II)	July 1956

OLD REGULATIONS

Candidates for the Degree of Bachelor of Science (Agriculture) as External Students under the Old Regulations are required to satisfy the minimum University and Faculty entrance requirements, to have been registered as External Students preparing for the Degree of B.Sc. (Agriculture), to pass or obtain exemption from the Intermediate Examination and to pass Parts I and II of the Final Examination.

The standard of the Final Examination is that which would normally be required of a whole-time student after a course extending over three academic years after completing the minimum University and Faculty entrance requirements, or two academic years after completing the Intermediate Examination.

INTERMEDIATE EXAMINATION IN AGRICULTURE

(To be held for the last time in July 1955)

FACULTY REQUIREMENTS

A candidate who has satisfied the minimum University entrance requirements by means of a General Certificate of Education on or after 1 May 1951 will be required to have passed in Mathematics at Ordinary or Advanced Level at the Certificate examination or an accepted equivalent.

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have satisfied the minimum University and Faculty entrance requirements ; (b) have been registered as an External Student preparing for the degree of B.Sc. (Agric.).

Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced a course of study. Students for the July examination should normally apply for registration during the period October to December of the year preceding the examination, and not later than 25 February. Students for the November examination should normally apply for registration in the period January to March preceding the examination, and not later than 17 September. **Students who apply to take the Final Examination less than three academic years from the date of registration are warned that an application for late registration, with a late fee of £2 2s., will be necessary when they apply for approval of candidature for the final examination.**

DATE OF EXAMINATION

The examination shall commence on the first Monday after June 28 ; and (in London only) a further examination will be held, beginning on the fourth Monday in November. The syllabuses for the November examination are the same as those for the preceding July.

ENTRY TO EXAMINATION

For the examination held in July, the candidate list will be opened on 12 February. Entry forms will not be despatched by post from the University after 18 March, and the candidate list will be closed on 25 March. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. No entry can be accepted after the candidate list has been closed.

For the examination held in November, the candidate list will be opened on 5 September. Entry forms will not be despatched by post from the University after 10 October, and the candidate list will be closed on 17 October. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

Whole examination	£	s.
		6	6

Referred subject	2	2
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Exemption in virtue of another Examination :—

Complete exemption	no fee
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Partial exemption, each remaining subject taken	..	2	2
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2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the July examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix). In the case of the November examination no refund can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION

1. The examination shall be a Pass Examination only, in four subjects as follows :—

(1) **Botany** 2 three-hour papers and a practical examination.

(2) **Chemistry** 2 three-hour papers and a practical examination.

(3) **Zoology** 2 three-hour papers and a practical examination.

(4) **One of the following subjects :—**

Economics	2 papers of three hours each.
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Geology	2 three-hour papers and a practical examination.
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Applied Mathematics	2 papers of three hours each.
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Pure Mathematics	2 papers of three hours each.
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Physics	2 three-hour papers and a practical examination.
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[*Note.*—The syllabuses and examination papers will be the same as those for the Intermediate Examinations in Arts and Science in the corresponding subjects.]

2. The examination shall be conducted in the main by means of printed papers, but the examiners shall not be precluded from putting oral questions to any candidate.

3. No candidate offering an Experimental Science subject will be allowed to pass unless he satisfies the examiners both in the practical and written parts of each subject.

4. Candidates shall not be approved by the examiners unless they have shown a competent knowledge in each of the four subjects of the examination.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

6. A candidate who has passed the Intermediate Examination in Agriculture will not be permitted to re-enter except as provided under the regulations for supplementary subjects.

REFERENCE

1. A candidate who enters for the whole examination on one and the same occasion, but who fails to reach the required standard in one subject only, may be referred, i.e., he may be permitted to re-present himself for examination in that subject alone or in another subject allowed by the regulations at one or more subsequent Intermediate Examinations in Agriculture.

2. The examiners will recommend that a candidate be referred only if his failure in one subject is not serious, and if his performance in the remaining subjects is reasonably good.

3. A candidate who has completed the Intermediate Examination after having been referred in one subject will be deemed for all purposes to have passed the examination in question on the date of completion.

SUPPLEMENTARY SUBJECTS

Candidates who have passed or been exempted from the Intermediate Examination in Agriculture may enter for examination in one or more supplementary subjects.

EXEMPTIONS

In virtue of Higher School Certificates and the General Certificate of Education :—

1. (a) A candidate who (i) holds a Certificate or Certificates awarded on a Higher School Examination recognized by the Ministry of Education as an approved second examination in Secondary Schools and (ii) is qualified to proceed to the External Intermediate Examination in Agriculture, may apply for exemption in respect of any subject or subjects endorsed on his Higher School Certificate or Certificates on the Main (Principal) or Additional Subject standard provided that the subject(s) correspond to those which may be offered at the Intermediate Examination in Agriculture.

Candidates who have not qualified for the award of a Higher School Certificate but who have been permitted to count successes gained in 1949 and 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirement, may apply for exemption in corresponding subjects of the Intermediate Examination in respect of these two subjects.

(b) A candidate who (i) holds a General Certificate or Certificates of Education awarded by one of the approved University Examining

Bodies, and (ii) is qualified to proceed to the External Intermediate Examination in Agriculture, may apply for exemption at that examination in any subject or subjects passed at the Advanced Level, provided that the subject(s) correspond to those which may be offered at the Intermediate Examination in Agriculture.

(c) From 1 September 1952, all fees payable in respect of complete or partial exemption from the Intermediate Examination are abolished. Candidates who are required to take part of the Examination to complete a partial exemption already held by virtue of another examination, whether of the University or other examining body, will be required to pay entry fees for the subject or subjects which they are required to take, but no additional fee for exemption from the remaining part of the examination. Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for a Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and paid the six guinea fee to include a first entry in one or more subjects.

(d) A candidate who is required to pass in two or more subjects in order to complete his Intermediate qualification must satisfy the examiners in all such subjects at one and the same examination, and if he is only partially successful he shall be required on re-entry to offer all such completing subjects again.

(e) A candidate may, if he so desires, complete his exemption qualification by passing in the required additional subjects at a subsequent Higher School Examination or General Certificate of Education (Advanced Level) Examination, provided the subjects offered conform to the Regulations. In this case all the subjects required must be passed at one and the same Higher School Examination or General Certificate of Education (Advanced Level) Examination.

(f) No certificate will be issued to candidates in respect of exemption, but a notification will be sent to duly qualified candidates at their request when the exemption has been completed, stating that they are qualified to proceed to the B.Sc. (Agriculture) Examination on complying with the Regulations in all respects.

In virtue of other examinations of this University :—

2. Candidates who have passed the Internal Intermediate Examination in Agriculture of this University in accordance with the conditions then in force for External Students are entitled to exemption from the External Intermediate Examination in Agriculture.

3. Any candidate, whether Internal or External, who has passed Intermediate Arts or Science of this University shall be exempt from examination at Intermediate Agriculture in any subject in which he has passed at such examination.

4. Graduates in Horticulture of this University, whether Internal or External, shall be exempt from the Intermediate Examination in Agriculture.

5. Candidates who have passed Part II of Intermediate Economics or Commerce of this University shall be exempted from Paper II in Economics.

6. Candidates who have passed Part I of Intermediate Economics or Commerce, or Intermediate Estate Management of this University, shall be exempted from Paper I in Economics.

TIME TABLE

The examination shall be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 20 August (for the July examination) and on 7 January (for the November examination) the External Registrar shall publish a list of the candidates who have passed arranged in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

3. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October for the July examination, and in January for the November examination.

4. Certificates of having passed the examination will not be issued except to qualified students applying for such certificates.

5. Each successful candidate will receive a Detailed Report on his results in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass.

6. Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—

D—Failure ; E—Bad Failure.

7. Failure in a subject which includes a practical or oral examination indicates failure in the subject as a whole and no further information can be given regarding the candidate's performance in the various parts of the examination.

8. Detailed Result Reports will be sent to successful candidates from one to two months after the publication of the ordinary Pass List, but will be sent to unsuccessful candidates at the time when they are notified of the result of the examination.

9. Educational institutions in receipt of annual grants from public funds may apply for a statement of the detailed results of their candidates ; such applications must be accompanied by a list of the candidates' names, the name of the examination and the date at which it was taken. The results cannot be communicated until about two months after the publication of the Pass List and each institution will have communicated to it the results of those candidates only who are registered as pursuing a course of study at that institution.

SYLLABUSES

Botany

[Two papers and a practical examination.]

Morphology

The structure and properties of the cell. The plant body : its structure, development and modifications. Nuclear and cell division.

Special Morphology, Reproduction and Taxonomy

The general characters of the following groups :—

Bacteria.

Fungi, especially *Mucor*, *Penicillium*, *Saccharomyces*, any common gill-bearing fungus, and a plant pathogen.

Algae, especially *Chlamydomonas*, *Spirogyra*, *Vaucheria* and *Fucus*.

Bryophyta, especially *Pellia*, and *Funaria*, the latter with special reference to its life history, and without detailed treatment of the sporophyte.

Pteridophyta, especially *Dryopteris*, and the special features of *Selaginella*.

Gymnosperms, especially *Pinus*.

Angiosperms, a study of the morphology and biology of the flower, with some training in the use of a flora. Family characters not to be emphasized.

Elements of Physiology

The mineral nutrition and water relations of plants.

Outlines of metabolic changes in the plant, especially respiration and photosynthesis.

Growth.

Geotropism and phototropism.

An elementary knowledge of the soil in relation to the plant.

Elements of genetics and their cytological basis. Evolution.

Practical Examination

1. The practical work will include the dissection and examination of plants or parts of plants, and the reference to the systematic position of the plants or parts of plants comprised in the foregoing syllabus. Simple experiments in practical physiology may be set.

2. Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination. Candidates may bring their own stains to the practical examination, but double staining is not desired. Candidates will be permitted to provide for themselves and use hand microtomes if they so desire.

3. Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Chemistry

[Two papers and a practical examination.]

The following outline is not to be regarded as a rigid syllabus of instruction, but is given in continuation of the syllabus of the Ordinary level of the General Certificate of Education of the University of London for the general guidance of candidates as indicating the range of the written part (I) and the experimental part (II) of the examination in Chemistry

The whole syllabus is to be treated in an elementary manner and as far as possible experimentally. More importance will be attached to a sound understanding of fundamental principles and standard experimental methods than to an acquaintance with advanced theoretical ideas.

I

The laws of chemical combination. History of the discovery of the composition of air and water. The atomic and molecular theories. Equivalent, atomic, and molecular weights and methods for determining them. Valency. Atomic structure in so far as it is necessary to explain simply (a) the different types of valency, and (b) the periodicity in the properties of the elements of atomic number 1 to 18.

The periodic classification of elements, as illustrated by the chemistry of : H, He, Ne, A, Li, Na, K, Cu, Ag, Be, Mg, Ca, Sr, Ba, Zn, Cd, Hg, B, Al, C, Si, Sn, Pb, N, P, As, Sb, Bi, O, S, Cr, F, Cl, Br, I, Mn, Fe, Co, Ni. The treatment of the descriptive chemistry should be extended to include the preparation and properties of the more important compounds of : H, B, C, N, P, As, O, S, Cl, Br, I, Na, K, Cu, Ag, Mg, Ca, Ba, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe.

[Note.—For the purpose of this syllabus, “important compounds” means (a) compounds in common laboratory use for work up to Intermediate standard, or (b) compounds which have well-known uses.]

Sources and common processes for the manufacture or production of : H, He, Ne, A, O, N, Cl, Br, I, C, P, S, Na, Cu, Ag, Mg, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe, Ni.

[Note.—A knowledge of metallurgical and other manufacturing operations will not be required except in broad outline.]

Common processes for the manufacture of the following materials : Na_2CO_3 , NaHCO_3 , NaOH , CaO , SO_2 , H_2SO_4 , NH_3 , HNO_3 , HCl , hypochlorites, chlorates, bleaching powder, CO_2 and the fuel gases.

The chemistry involved in inorganic qualitative and volumetric analysis (see Part II).

The chemistry involved in the detection of C, H, N, Cl, Br, I, and S, in organic compounds. Calculation of empirical and molecular formulae from experimental data.

Elementary principles of Organic Chemistry including the following : The quadrivalence of carbon and its power of forming stable bonds with non-metals and especially with itself. Relationship of structural formulae (excluding, except as mentioned below, the stereochemical aspect) of saturated open-chain hydrocarbons containing not more than 4 carbon atoms. Homology, Isomerism. Candidates should be able to give examples of structural isomerism, and should know why plane formulae are not universally acceptable, but they are not expected to be familiar with the formulae or behaviour of specific mirror-image or geometrical isomerides.

Typical properties conferred by substituents, emphasis being laid on the behaviour of groups rather than on the technique of preparation or recognition of individual substances. Nevertheless certain simple substances (mentioned below in parentheses) should be included among those selected as types ; candidates will be expected to be familiar with the usual origin or method of preparation and characteristics of these compounds. Substitution in saturated open-chain hydrocarbons (methane) by chlorine. The radicals $\text{C}_n\text{H}_{2n+1}$. Reactions of compounds $\text{C}_n\text{H}_{2n+1}\text{Cl}$ (Br or I) with alkali and ammonia. Alcohols of the general formula $\text{R}\cdot\text{CH}_2\cdot\text{OH}$ (methyl and ethyl alcohols), $\text{R}_2\text{CH}\cdot\text{OH}$, $\text{R}_3\text{C}\cdot\text{OH}$, and their behaviour towards sodium, phosphorus halides (or phosphorus together with halogens), hydrogen halides, oxidizing agents, and dehydrating agents, including sulphuric acid. Formation of ethers (diethyl ether). Unsaturated hydrocarbons, C_nH_{2n} (ethylene). Addition of H_2 , Cl_2 , Br_2 , and HBr to olefins. Action of alkali on the products

formed from olefins by addition of Cl_2 or Br_2 (acetylene). The carbonyl group in aldehydes, $\text{R}\cdot\text{CHO}$, and ketones, R_2CO (formaldehyde, acetaldehyde, acetone). The action of reducing and oxidizing agents on these substances, and the addition of HCN to them. Mono-basic carboxylic acids, $\text{R}\cdot\text{CO}_2\text{H}$ (formic and acetic acid). Reaction of acids with PCl_5 (acetyl chloride) and the behaviour of acid chlorides with water, alcohol, and ammonia. Esterification of acids (ethyl acetate) and the behaviour of esters towards acids, alkalis, and ammonia. Acid anhydrides (acetic anhydride), amides (acetamide) and their hydrolysis. Amines, RNH_2 , R_2NH and R_3N (methylamine, dimethylamine, trimethylamine).

Modifications of group function as illustrated by the following : Difference in the properties dependent on the group OH in alcohols and in acids. Differences exhibited by the group $\text{C} = \text{O}$ in aldehydes and ketones on the one hand, and in acids, esters, etc., on the other. Differences in the properties of the NH_2 group in amines and amides.

The elementary principles of Physical Chemistry, which will find illustration throughout the subject matter of the syllabus. The following topics should be included among those studied : The properties of gases : The laws of Boyle, Charles, Avogadro, Gay Lussac, and Graham, and the law of partial pressures. Difference of specific heats of gases at constant pressure and at constant volume. Ratio of the specific heats and its connection with atomicity treated empirically. Determination of molecular weights of gases and vapours. Thermal dissociation. The properties of solutions : Distribution law. Henry's law. Osmotic pressure. Proportionality of lowering of vapour pressure, raising of boiling point, and lowering of freezing point to molar concentration. Determination of molecular weights in solution. The essential differences between colloidal and true solutions. Electrolysis and electrolytic dissociation. Chemical equilibrium and simple applications of the law of mass action. Le Chatelier's principle. Solubility product. Simple treatment of the strength of acids and bases, indicators and the hydrolysis of salts. Effect of concentration, temperature, and catalysts on rate of reaction. Exothermic and endothermic reactions. Hess's law.

II

Practical Examination

Qualitative analysis of simple mixtures of not more than four inorganic radicals. (Phosphate separations will not be required.)

Preparation and use of volumetric solutions of : acids and alkalis, potassium permanganate, potassium dichromate, sodium thiosulphate, iodine, arsenious oxide, silver nitrate and potassium thiocyanate.

Candidates may also be required to examine the action of heat and reagents on substances supplied and to identify well-known products, including gases, produced in the reactions. The practical exercises may also include the preparation and purification of substances by methods involving solution, precipitation, crystallization, distillation and sublimation.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge ; centrifuge tubes ; water bath with cover pierced to take centrifuge tubes ; two long dropping pipettes ; micro burners ;

wash bottles 100 c.c. polythene squeezing type ; crucibles 25 mm. and 15 mm. ; spotting tiles (porcelain) and microscope slides ; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{1}{8}$ in. and block to hold these and centrifuge tubes ; rack for dropping pipettes ; long thin spatula ; Whatman papers (No. 120), 2 in. squares ; small porcelain dish ; forceps and tube holders ; anti-bumping tubes to fit in centrifuge tubes ; small conical flask 10 ml. ; pyrex tube fitted for testing evolved gases ; reagents ; strong acids in Jena T.K. bottles, other common reagents in bottles fitted with dropping pipettes.

Candidates are required to bring to the practical examination their *original* note-books for inspection by the examiners, and they may use their laboratory note-books and also any other book or books they wish during the practical examination. All books and note-books must be taken away by the candidates at the end of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Zoology

[Two papers and a practical examination.]

1. A study of the structure and of the elementary physiology of the rabbit.

2. The structure, mode of life and life-history of the following animals, to illustrate the general characteristics of animal organization :—

Amoeba, Euglena, Paramecium, Hydra, Obelia, the earthworm, the crayfish, Amphioxus, the dogfish, frog and rabbit.

3. Elementary physiology : metabolism ; nutrition (digestion, assimilation and food storage) ; respiration, excretion, movement, response to stimuli and reflex action ; growth and reproduction. The differences between plants and animals.

4. The modifications of structure, habit and life-history associated with parasitism (including the mode of transmission from host to host) as exemplified by Monocystis, Trypanosoma, the malarial parasite, the liver-fluke and the tape-worm.

Symbiosis.

5. The principles of classification and nomenclature. A discussion of the systematic position of the animals mentioned in paras. 2 and 4, and of their place in their respective phyla, and of these phyla in the animal kingdom.

6. The structure of a cell. Cell division. The multi-cellular organism illustrating morphological differentiation and the division of labour. The essential characteristics of the following :—epithelial tissues ; connective and supporting tissues (including the process of ossification) ; blood and lymph ; muscular tissues ; nervous tissues.

7. Sexual and asexual reproduction. The chief types of ova. Gameto-genesis. Fertilization and cleavage. The germ layers and their formation in amphioxus, frog and chick. The development and metamorphosis of the frog. The development of the chick up to the end of the third day of incubation. The development and functions of the foetal membranes of the chick and mammal.

8. Variation and heredity, including a simple treatment of the facts of genetics and nuclear cytology.

9. The evidence bearing on the occurrence of organic evolution. The theories of Lamarck and Darwin as to the method of evolution.

Practical

Observations on living animals should be made wherever possible. Candidates are expected to make adequate labelled drawings of all the preparations they examine and of all the dissections they make.

1. The dissection, or microscopical examination of whole mounts and sections, of the animals mentioned in paras. 2 and 4 (except the malarial parasite and *Trypanosoma*).

The list of animals may be changed from time to time, but two years' notice of any change will always be given.

2. The examination of the skeleton of the vertebrate types mentioned in para. 2, together with the skull of the dog.

3. The examination of preparations representing the chief varieties of the tissues mentioned in para. 6.

4. The examination of prepared sections of the following vertebrate organs :—skin, stomach, intestine, liver, kidney, ovary, testis and spinal cord.

5. The preparation of stained permanent mounts of suitable whole animals, parts of animals and tissues.

6. A study of the external changes during the development of the frog from fertilization to the end of metamorphosis.

7. The examination of whole mounts of and representative sections through :—

(a) The early stages of frog development to the time of the first appearance of the external gills.

(b) Stages illustrating the development of the chick during the first, second and third days.

Practical Examination

1. The candidate must be prepared to examine microscopically, to dissect, and to describe specimens or parts of the animals comprised in paragraphs 2 and 4 in the foregoing syllabus and to determine the zoological position of specimens in accordance with paragraph 5 above.

2. Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

3. Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Economics

[Two papers.]

I. Principles of Economics

The Economic Structure of the United Kingdom

Population : Size, sex- and age-distribution. Geographical and occupational distribution.

Industrial Structure : Relative size of main industries, their location and organization including agriculture, coal, steel, textiles.

The Labour Market : Trade unions and collective bargaining.

International Trade : Visible and invisible imports and exports.

National Income and Output :—Meaning, composition and distribution.

Public Finance : The main sources of revenue and types of expenditure.

Financial Organization : The commercial banks. The Bank of England. The capital market.

Some Elements of Economic Analysis

Division of Labour. The Factors determining average income per head. Causes of Location of Industry. Advantages of International Trade.

An outline of the functions of the price-mechanism ; supply and demand in relation to the allocation of resources.

Causes and effects of changes in demand for and supply of goods and factors. Elasticities of demand and supply. The effects of maximum and minimum prices. The incidence of direct and indirect taxes. Causes and effects of monopoly.

The nature and function of money, banks, and the foreign exchange market. The measurement of changes in the general level of prices and their causes.

II. *English Economic History*

The outlines of the economic and social development of England. The questions will deal mainly with the period from the eighteenth century to the present day, but candidates should be familiar with the nature of the open-field system of farming, with the handicraft system of industry, and with the system of foreign trade which existed before 1700. The aim of the syllabus is to enable students to disentangle the causes as well as the course of economic and social change.

Agriculture : The history of agriculture to include changes in agrarian organization and farming methods, "high farming," and agricultural adjustments in the late nineteenth and early twentieth centuries.

Industry : The transition to industrialism. Factors in industrial development— invention and technological change, the application of science, the widening of internal and external markets, increasing productivity. Iron, coal, and textiles. The growth and extension of the factory system. Changes in the location of industry. Roads, canals, and evolution of railways. The course of railway legislation. The outline history of shipping from sail to steam. Cheap steel and the subsequent course of industrial change ; the new industries of the late nineteenth and early twentieth centuries. Industrial concentration and combination. The industrial policy of governments since the last quarter of the nineteenth century.

Commerce and Finance : Economic problems and policy during and after the American and French Wars. The growth of the liberal economy ; the establishment of free trade. The growth of the banking system before, and after, the Act of 1844. The financing of railways, the achievement of general limited liability and the spread of joint-stock organization. The expansion of home, and the changing character of foreign trade. The growth and distribution of foreign investments. Major changes in the general price level. The alternation of good and bad times. Major changes in taxation and government expenditure. Tariff policy in the twentieth century. The economic consequences of twentieth-century wars.

Social Organization : The expansion of population. Changes in the mobility of labour. The problems created by the growth of towns. The declining influence of the land-owning classes. The growth and influence of the middle classes. The growth and composition of the working classes ; changes in their standard of living ; the history of Trade Unionism ; the Co-operative movement. Changes in the franchise and their economic consequences. The social policy of governments including the history and break-up of the Poor Law, public health and factory legislation, education, the expansion of the social services.

Geology

[Two papers and a practical examination.]

I. *Physical Geology*

(a) The earth as a planet ; origin and general characters of its chief surface features.

(b) The physical condition of the earth's crust and interior ; evidences of internal activity such as volcanic, seismic, and diastrophic phenomena.

(c) General characters and inter-relationships of rocks.

(d) The work of geological agents ; the circulation of rock material, including the processes of denudation, transport, deposition, and deformation.

II. *Mineralogy and Petrology*

(a) Elements of crystallography and crystallographic projection and notation.

(b) The common rock-forming and vein-forming minerals ; their physical characters, chemical composition, and modes of origin and occurrence.

(c) The simpler optical properties of the common rock-forming minerals and the physical principles on which these properties depend.

(d) The general characters and relationships of the chief types of sedimentary, igneous, and metamorphic rocks.

III. *Historical Geology*

The disposition of rocks and its representation on maps ; evidences of relative ages of rocks ; fossils, their preservation and distribution in rocks of different ages ; the geological systems, their broad characters and distribution in Great Britain.

Practical Work

Interpretation of simple geological maps in terms of rock-structure and its relation to topography ; expression of this interpretation by means of sections ; graphic methods of finding thickness, dip and strike of beds, of completing outcrops, and of tracing the underground extension of strata.

Identification and description of common minerals and typical rocks, with and without the microscope ; exercises in projection of crystals ; identification and description of crystal forms of common minerals, both on models and on actual crystals.

Reference of fossils to their broad biological groups and geological periods.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Applied Mathematics

[Two papers.] Equilibrium of one or more bodies under the action of uniplanar forces, or of parallel forces. Smoothly jointed frameworks, including graphical solutions. Properties of mass centres, and their determination in simple cases. Determination of second moments of solid figures. The laws of friction.

Relative velocity and acceleration, their resolution and composition. Graphical representation of relations between displacement, velocity, acceleration and time. Mass, momentum, force, impulse, work, energy, and power. Simple cases of direct and oblique impact. Motion under the action of a constant force. Rectilinear motion of two connected particles. Simple problems on the motion of projectiles. Uniform circular motion. The conical pendulum. Simple harmonic motion. Motion in a vertical circle under gravity. Motion of a rigid body about a fixed axis. Dimensions. Change of units.

Pressure of a fluid at a point. Magnitude and direction of resultant thrust of liquids on plane and spherical surfaces. Centres of pressure in simple cases. Resultant force of buoyancy on bodies partially or wholly immersed.

Elementary ideas of statistics. Frequency diagram. Calculation of the mean. Standard deviation. Standard deviation of the mean.

Pure Mathematics

[Two papers.] The theory of quadratic equations. The convergence of the geometric series. Permutations and combinations, including simple applications to probability. The binomial theorem for positive integral indices. The theory of indices. The nature and use of logarithms.

The geometry of similar rectilinear figures. Mensuration of plane rectilinear figures. The angles made by planes and straight lines with one another. Mensuration of simple solid figures, including the tetrahedron, cylinder, cone and sphere (the methods of the calculus may be used where suitable). Rectangular cartesian co-ordinates applied to the straight line, circle, parabola, ellipse, and hyperbola.

Plane trigonometry, up to and including the solution of triangles. Trigonometric, exponential, and logarithmic functions, and their graphs.

The definition of a derivative. Differentiation of x^n (n an integer, positive or negative), $\sin x$, $\cos x$, $\tan x$, e^x , and $\log x$. Differentiations of a sum, a product, a quotient, and in simple cases of a function of a function. Definite and indefinite integration of the above functions and of simple functions of them. Areas and volumes. Representation of equations by curves, with easy applications. Simple examples on maxima and minima.

Physics

[Two papers and a practical examination.] Candidates will be expected to show an acquaintance with the fundamental principles of mechanics up to the standard of the Ordinary level of the General Certificate of Education of the University of London, and to have acquired a general knowledge of the apparatus by which the elementary principles of Physics are illustrated and applied.

General Properties of Solids, Liquids, and Gases

Relation between volume and pressure in gases. Friction and viscosity. Surface tension. Diffusion. Osmosis. Stretching of wires.

Heat

Temperature. Instruments for the measurement of temperature. Expansion of solids, liquids, and gases with rise of temperature, isothermal and adiabatic expansion. Quantity of heat. Specific heat. Change of state. Latent heat. Vapour pressure. Boiling point. Dew-point. Formation of cloud, fog, and dew. Conduction. Definition of thermal conductivity. Convection. Radiation. Newton's Law of cooling. The mechanical equivalent of heat and modes of determination. The conservation of energy.

Sound

The production and propagation of sound. Nature of wave-motion. Amplitude. Wave-length. Frequency. Experimental determination of the velocity of sound in air. Effect of change of temperature on the velocity. Reflexion. Determination of frequency by simple methods. Experimental investigation of the modes of vibration of strings by means of the sonometer. Experimental investigation of the vibrations of air in pipes by resonance to tuning forks. Organ pipes. Position of nodes and antinodes.

Light

Propagation of light. Laws of reflexion and refraction. Photometry. Reflexion at plane and spherical surfaces and the formation of images. Refraction at plane surfaces and by prisms. Minimum deviation. Chromatic dispersion. The general laws of radiation: Visible, ultra-violet, infra-red. Emission and absorption. Heating effects of radiation. Phosphorescence and fluorescence. The formation of images by single lenses. Long and short sight and their correction by lenses. The combination of two lenses to form a simple telescope or microscope. Measurement of velocity of light. Simple properties of polarized light.

Magnetism and Electricity

Properties of magnets. Simple phenomena of magnetization. The magnetic field: lines of force. The law of magnetic force. Magnetic moment. Intensity of magnetization. The earth as a magnet. The magnetic properties of iron and the elementary laws of the magnetic circuit. The simpler phenomena of electrified bodies. Conduction and insulation. Electrification by friction and by induction (influence). Distribution of electrification on conductors. Electric field: strength of field. The law of electric force. Potential. Capacity. Energy of charge. Electroscopes and electrometers. Electric current. Magnetic field of current. Magnetic measurement of current. Galvanometers. Work done by an electric current. Electromotive force. Difference of potential. Resistance. Ohm's Law. Wheatstone's Bridge. Potentiometer. Resistance of cells. Volt. Ohm. Ampere. Ammeters. Voltmeters. Heating effects of currents. Elementary phenomena of electrolysis: Faraday's Law. Voltameters. Primary and secondary batteries. Action on current circuits in a magnetic field. Electromagnetic induction: Faraday's Law; Lenz's Law; induction coil. A thermo-electric couple. Simple phenomena of discharge in gases.

Practical Examination

[The following scheme is not exhaustive, and is intended merely to show the general nature of the exercises at the practical examination. The examiners are not precluded from setting other exercises and practical problems illustrative of the principles set forth in the syllabus.]

Measurements of length, mass, and time, involving eye-estimation of tenths of a division, use of vernier, use of the balance (weighing to one centigram), use of a seconds-hand watch. Determination of volumes. Specific gravities of solids, powders, and liquids. Use of the hydrometer. Verification of Boyle's Law. Determination of the centre of gravity of a plate. Determination of g by simple pendulum. Determination of velocity of sound in a tube by resonance with a fork. Use of the sonometer. Use of thermometers and determination of fixed points. Simple methods of determining specific heat and latent heat of fusion and of evaporation. Determination of dew-point. Use of simple photometers. Focal lengths of mirrors. Focal lengths of lenses. Arrangement of two lenses to make simple forms of telescope, microscope, and projection lantern. Simple use of spectrometer. Tracing the path of a ray of light through a block of glass and deduction of refractive index. Refractive index by method of apparent thickness. Tracing the lines of force in the neighbourhood of a magnet. Comparison of magnetic moments and fields. Measurement of resistance of wires and cells. Comparison of electromotive forces with potentiometer. Measurement of electro-chemical equivalent.

Candidates must bring to the practical examination their *original* note-books, which must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory, for inspection by the examiners. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work. These note-books must be taken away by the candidates at the close of the examination.

B.Sc. (AGRICULTURE) EXAMINATION

Old Regulations—for examinations held
up to and including 1956 only

QUALIFICATIONS FOR ADMISSION

1. To be admitted to Part I of the B.Sc. (Agric.) Examination, each candidate must (a) have satisfied the minimum University and Faculty entrance requirements, (b) have been registered as an External Student preparing for the Degree of B.Sc. (Agriculture), (c) have completed or obtained exemption from the Intermediate Examination in Agriculture at least one academic year previously and (d) have obtained approval of candidature for the examination.

2. To be admitted to Part II of the B.Sc. (Agric.) Examination or to Parts I and II on the same occasion, each candidate must (a) have been registered as an External Student preparing for the degree of B.Sc. (Agric.) at least three academic years earlier, (b) have passed the Intermediate Examination in Agriculture at least one academic year previously, (c) have passed Part I of the Examination or enter for it at the same time as he enters for Part II and (d) have obtained approval of candidature for the examination.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the second Monday in June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for both parts of the examination during the period October-November in the year next but one preceding the examination for Part II and not later than 7 December of that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 7 December, applications may be accepted after this date on payment of a late fee of £1 1s. which is not returnable, but no application will be accepted after 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate lists for the two Parts will be opened on 21 December of the preceding year. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 January, and the candidate list will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

						£	s.
Whole examination	10	10
One part only	5	5
Referred subject	2	2

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Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for Final Examinations taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed " Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

1. A candidate may take Part I before Part II, or may take both parts on the same occasion, but Part II may in no case be taken before Part I.

2. A candidate who takes Parts I and II on the same occasion and who passes in Part I and fails in Part II shall be credited with having passed Part I, but a candidate who fails in Part I shall have no report made upon his work for Part II of the examination.

3. The subjects of the examination shall be as follows :—

PART I

- | | |
|-----------------------|--|
| (1) Botany .. | 1 three-hour paper and a three-hour practical examination. |
| (2) Chemistry | 2 three-hour papers and an oral examination on practical work. |
| (3) Geology .. | 1 three-hour paper and a three-hour practical examination. |
| (4) Zoology .. | 1 three-hour paper and a three-hour practical examination. |

PART II

One paper and an oral examination in each of the following subjects :—

Agricultural Accountancy.

Agricultural Economics.

Agricultural Engineering.

Animal Husbandry.

Crop Husbandry.

Farm Management.

Veterinary Hygiene.

4. No candidate for Part I will be allowed to pass unless he satisfies the examiners both in the written and practical parts of each subject.

5. At the oral examinations candidates will be required to produce a note-book recording a year's operations on a farm. The oral examinations shall be held on a farm, in order that the extent of the candidate's personal acquaintance with the routine of farming may be determined.

6. No candidate for Part II will be allowed to pass unless he satisfies the examiners both in the oral and written parts of the last five subjects.

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7. The examiners shall be at liberty to test a candidate by oral questions in any subject of the examination.

8. Candidates shall not be approved by the examiners, unless they have shown a competent knowledge in each of the subjects of the examination.

9. All answers to examination questions shall be written in English unless instructions are given to the contrary.

10. There are no exemptions from this examination.

REFERENCE

1. A candidate who takes Part I alone and who fails to reach the minimum standard in one subject only may be referred, i.e., he may be permitted on the recommendation of the examiners to present himself on one occasion only in that subject, either alone or with Part II, at the next Final Examination in Agriculture.

2. A candidate who takes Parts I and II together and who fails to reach the minimum standard in one subject only of Part I may also be referred, but such a candidate shall have no report made upon his work in Part II.

3. A candidate who fails in his referred subject will be required on re-entering to offer the whole of Part I again, and a candidate who takes his referred subject with Part II and fails in his referred subject shall have no report made upon his work in Part II.

4. The examiners will recommend that a candidate be referred only if his failure in the subject is not serious, and if his performance in the remaining subjects is reasonably good.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 25 July the External Registrar shall publish a list of the candidates who have passed, arranged in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the B.Sc. (Agriculture) Examination who have completed more than half of the Examination, are eligible to apply for an Aegrotat Degree. Candidates who have entered for Part I only are not eligible to apply for the award of an Aegrotat Degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher degree on complying with the Regulations for such degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.Sc. (Agriculture) under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES

PART I

Botany

Grassland Work.—The systematic position of the Gramineae. Comparison with rushes and sedges. Classification and economic characters and the identification of the commonly occurring grasses and clovers and of parts thereof.

Principles underlying the management of grassland. Alteration in grassland plants by grazing and cultural operations. Natural and semi-natural types of grassland. Principles underlying the selection of a seeds mixture.

Methods for examining the herbage of meadows and pasture.

Cereals.—Classification and comparison of types of wheat, barley and oats. Points of distinction in the diagnosis of new varieties. The general structure of the plant of maize, rice and rye. The effect of external conditions on the cereal crop, laying, tillering, root-system.

Crop Plants.—Systematic review of the Natural Orders to which the useful agricultural plants of Great Britain belong. Detailed study of the important species and varieties of these plants and their recognition in various stages of growth. Influence of habitat and external conditions on agricultural plants.

Mycology.—The life history of the principal fungous pests of cereals, potatoes, root-crops and the hop. Remedial and preventive measures. The mushroom. Yeast and fermentation. Bacteria in their relation to the nutrition of agricultural plants.

Genetics.—Principles of plant breeding, origin of new varieties and development of improved forms.

Seed Testing.—Object and methods of seed testing. Preliminary inspection of samples ; methods of sampling ; purity, germination and other tests. Adaptations required for special cases. Impurities and their recognition. Points of practical importance as regards legislation.

Weeds and Harmful Plants.—The nature of the damage caused by weeds. Adaptation of plants or parts thereof for distribution by various agencies. Description of plants or seeds scheduled as poisonous or harmful.

Parasitic and semi-parasitic Angiosperms, with special reference to dodder and broomrape. Prevention and eradication of weeds : (a) methods correlated with the special life history of the plants, (b) effect of cultivations, and (c) chemical methods of control. Conditions of growth of arable contrasted with those of grassland weeds. Vitality of dormant seed. Influence of habitat (change of country, etc.). Weed communities. Weeds as soil indicators. Use of a weed survey. Weed seeds as determinants of place of origin of samples.

Classification and identification of common farm weeds or portions thereof.

Foods and Feeding Stuffs.—Botanical examination of foods and feeding stuffs, including the microscopic examination of cakes and meals.

Practical Work.—Examination, recognition and description of plants or parts of plants referred to above, including the preparation and mounting of stained sections. Examination and testing of seed samples, and use of seed testing apparatus ; identification of useful and weed seeds. Examination of diseased plants and identification of the parasite ; preparation of slides and examination of simple cultures such as those of yeast or Mucor. Examination of cattle foods including microscopic diagnosis of the constituents of cakes and meals.

Field Work.—The relation of plants to habitat conditions. Pasture analysis. Identification of British plants by means of a Flora. Candidates must bring to the examination their practical note-books, which must contain a certificate by their teachers, if any, that the work is the candidates' original work. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work. These note-books must be taken away by the candidates at the close of the examination.

Chemistry

The candidate will be required to possess a knowledge of the chemistry of the more important substances involved in plant and animal life, including the enzymes, and also the chemistry of fermentation. He must also be familiar with the main lines of enquiry and the chief results obtained at Rothamsted and Woburn and also with the more important recent work of foreign stations. History and development of Agricultural Chemistry.

Plant Life—Proximate, and ultimate constituents of plants, their distribution in the plant, current views as to their functions ; methods of investigation. Requirements of the crop with respect to air, food, light, water, and soil. Elements required for nutrition, their respective functions. Chemical changes during germination, growth and maturation. Composition of the ordinary farm crops, variation with soil, season and manuring. Changes during storage, ensilage.

Soils.—Origin considered in relation to geological structure, soil profiles, composition, chemical and physical properties of soils. Relation of soil to temperature and water content, effect of tillage operations, methods of improving soils, liming, chalking, marling, etc. The soil as a medium for plant and bacterial life. Bacterial changes in soil, nitrification, denitrification, humification, partial sterilization, etc. Methods for mechanical and chemical analysis of soil, interpretation of results. Movements of salts in soils, drainage water, alkali soils. Soil types.

Manures.—Farmyard manure, composition, chemical and bacterial changes. Green manuring. Composition and properties of the chief fertilizers, their sources and mode of action. Adaptation to and relative values on soils of different types. Methods of analysis; adulteration. Valuation of manures. Crop residues.

Feeding.—Constituents of the animal body, variation with age and feeding. Constituents of food, their respective functions. Respiration and excretion. Chemistry of animal digestion, methods of investigation. Digestibility and circumstances affecting it. Nutritive value of food, calorimetric experiments. Relation of foods to animal requirements, albuminoid ratio, starch equivalents. Feeding stuffs and sources of supply, preparation. Analysis of feeding stuffs and interpretation of results. Adulteration. Residual manurial value of foods. Methods of conducting feeding experiments.

Sprays.—Composition and properties of the chief materials used in the control of insect and fungus pests. Sprays and dusts. Fumigation. Soil sterilization. Seed treatment.

Dairy Chemistry.—Composition of milk, butter and cheese. Action of ferments and the changes they produce. Pasteurization, sterilization, preservatives. Circumstances affecting quantity and quality of milk. Chemical changes involved in the production of butter and cheese, and their after-changes during ripening. Methods of milk testing, analysis of dairy products. Adulteration.

Practical Work.—There will be an oral examination at which the candidate must submit a note-book which must contain a certificate by his teachers, if any, that the work is the candidate's original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work. This note-book must include a record of experiments carried out by him on the chemical and physical properties of soils and manures, the composition of crops; nitrification, properties of enzymes, etc.; analysis of manures, feeding stuffs, dairy products, soils and water; insecticides and fungicides. These note-books must be taken away by the candidates at the close of the examination.

Geology

Rocks and minerals as the sources of sand, silt and clay in soils; igneous, sedimentary and metamorphic rocks, principles of classification. Chronology of sedimentary rocks. Superficial deposits, drifts. Local geology and the interpretation of geological maps in relation to soil-formation. The disintegration of rocks and minerals. Skeleton soils. Pedogenesis. Geology and deposition of the mineral part of the soil, soil-colour, topography of soils, natural drainage of soils, soil-profile. The principles of soil classification: soil groups (e.g., the soils of the Tundra, Podzols, Brown Earths, Tchernozem, Alkaline Soils, Laterites). Soil series, soil types, soil (textural) classes. Soil surveying. Soil mapping.

Practical Work.—The interpretation of geological maps with special reference to superficial deposits and drift. The relationships between the evidence provided by geological maps and the soil.

Soil maps. Comparisons between soil maps and the descriptions of the soil mapped. Soil-survey methods.

Examination of soils in monoliths and in the field (including soil colour and soil texture) : reporting upon such soil-examinations. The evidences of pedogenic processes (e.g., pans, bleaching, colour changes).

The identification in hand-specimens of the common igneous, sedimentary and metamorphic rocks.

The microscopical identification and description of common minerals found in the soil such as Quartz, Felspar, Mica, Glauconite, Zircon, Rutile, Staurolite, Magnetite, Tourmaline, Haematite, Limonite. [List subject to revision from time to time.]

Zoology

General Principles.—The general principles of Agricultural Zoology and of control methods in relation to animal pests. A study of the phenomena of parasitism, parthenogenesis (including paedogenesis), viviparity, the social behaviour of insects, sexual dimorphism. Mendelism.

General Agricultural Zoology.—The agricultural importance of Protozoa, Platyhelminthes, Nematahelminthes, Annelida, Arthropoda, Aves and wild Mammalia.

Anatomy and Physiology.—A knowledge of the organization of the types studied in the Intermediate course supplemented by a consideration of the snail, the wasp and an eelworm, *Ascaris*, and the external characters of a millipede and a centipede.

Economic Entomology.—Life histories of the principal injurious insects. Feeding habits, particularly in relation to control of insects. Biological control and beneficial insects.

Taxonomy, etc.—The principles of zoological nomenclature and bibliographical indexing. Methods of collecting, preserving and examining specimens.

Practical Work.—The dissection, microscopical examination and description of specimens or parts of the following animals : snail, wasp, eelworm, *Ascaris*. The examination of the external features of millipedes and centipedes. The determination of the zoological position of animals belonging to groups represented in this syllabus. Recognition in the field of the more important animals of economic importance. Candidates must bring to the examination their practical note-books, which must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory and the field, so that the examiners may inspect them. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work. These note-books must be taken away by the candidates at the close of the examination.

PART II

Agricultural Accountancy

Reasons for keeping accounts of various kinds. Objectives.

General principles of double-entry book-keeping. Description and use of various books ; ledger, journal, cash book, petty cash book, day books, wages book. The Trial Balance, Trading and Profit and Loss Accounts, and Balance Sheet.

Use of the analytical cash book and other columnar books. Partnership accounts.

General office work : correspondence, invoices, rendering accounts, filing systems. Different kinds of cheques and banking accounts.

Valuations for accounting purposes : when and how to make them. The farm balance sheet.

Methods of farm accounting for different conditions : financial, departmental and cost accounts. Accounts for the owner-occupier.

General principles and methods of cost accounting. Objectives, advantages, and difficulties. Enterprise cost accounts.

Special cost records : i.e., time sheets, records for foodstuffs, manures and consumable stores, cropping schedules, crop and stock production records. Construction of cost accounts for horse labour, tractor work, crops, livestock and livestock products.

Interpretation of results from financial and cost accounts. Use of accounts for management purposes.

Assessment of farmers for income tax : special provisions. Preparation of accounts for income tax purposes.

Agricultural Economics

Introductory.—Definition and scope of agricultural economics, its relation to other sciences and to farm management, accountancy and statistics. Farming as an industry ; characteristics, advantages and drawbacks.

Development of Economic Problems in Agriculture.—The manorial system, enclosures, corn laws, foreign competition, growth of population, labour conditions, scientific improvements.

Economic Theory.—Definition of terms and laws ; wealth, value, price, utility, cost of production, supply, demand, capital, rent. Important economic laws—diminishing utility, diminishing returns, supply and demand.

Factors of Production.—Land, labour, capital and organization. Relative importance of these factors at different times and under different conditions ; economy in the use of each factor ; the law of the minimum.

Land.—Its economic characteristics ; land development schemes and their objects.

Labour.—Characteristics of farm labour, comparison with labour in other industries, the determination of wages, the minimum wage movement, the relation between wages and prices, standards of living.

Capital.—Characteristics of farming capital, requirements for different systems of farming, landowner's v. tenant's capital, how farming capital is provided, credit schemes.

Organization.—Comparison with other industries, the training of a farm organizer, buying *v.* renting land ; large, medium and small farms and small-holdings ; comparison of different countries. Selection of a suitable system of farming for different conditions—choice of crops and livestock, simple *v.* diversified systems, relation to economic conditions.

Standards of Efficiency.—Comparison of different standards.

Rents and Profits in Farming.—Definitions, theory of rent, land values, relation between wages, rents and profits. Farming as a profit-making industry.

Marketing of Farm Products.—Development of marketing problems. Middlemen. Different marketing processes. Special difficulties. Comparison of different countries. Recent developments.

Agricultural Co-operation.—What it means. Co-operative Society *v.* Joint Stock Company. Conditions for successful co-operation. Special difficulties. Comparison of different countries.

Agricultural Statistics.—Different kinds. Collection, interpretation and use. Official statistics, index numbers, farm records, accounting data, the meaning of scientific farm management.

Research Work in Economics.—Cost accounts, financial accounts, surveys, price analysis. Internal *v.* external records. Comparison of methods at different centres—field work, office work, reporting. Dissemination of results amongst farmers.

Agricultural Engineering

(a) Farm Implements and Machinery

Tillage Implements.—The plough, its mechanical principles, construction, handling and care of. Types of ploughs, such as, the swing, wheeled, multiple furrow, tractor, digging, ridging, paring, one-way and disc. Rotary tillers. Mole ploughs and their operation. Cultivators, harrows and rollers.

Seeding and Planting Implements.—Construction and operation of seed drills, manure distributors, potato planters and transplanting machines.

Harvesting Machinery.—Construction and operation of farm grass mowers, reapers and binders. Implements used in hay and cereal harvesting, carting and stacking. Potato lifters and root lifting implements. The general principles of the construction and operation of the combine-harvester.

Barn Machinery.—Threshers. Food-preparing machines. Belting and shafting. Pumps. Lifting appliances.

(b) Energy Producers

Wind, Water and Electrical Power.—Simple hydraulic measurements concerning the flow of water in streams and pipes. Water wheels and turbines. Windmills. The application of electrical power on the farm.

Steam and Internal Combustion Engines

(i) The steam boiler and its accessories. The construction and functioning of the single cylinder steam engine. The construction and functioning of the four-stroke and two-stroke internal combustion engines. Diesel engines. Suction gas producer plants. Methods of determining Indicated and Brake horse-power. The erection of engines and machinery, including concrete foundations. Governing of engines.

(ii) Principles and construction of farm tractors. The engine ; carburation ; ignition ; cooling ; lubrication ; the transmission system, including the clutch, gear box, differential and final drive ; steering ; wheels and chain tracks and gripping devices ; drawbar pull and calculation of drawbar horse-power ; general outlines of chief types of farm tractors ; cost of upkeep ; engine and accessory faults and their remedies.

(iii) Chief types of motor lorries used by farmers ; costs ; depreciation ; upkeep and management.

Animal Husbandry

British Live Stock.—Importance of the live stock industry. Statistics. Relationship of stock to arable farming. Suitability of types and breeds to local conditions.

Animal Breeding.—Practical application of the laws of heredity. Breed formation. Selection, in-breeding and systematic crossing. Fixation of types.

Stock Feeding.—Classification and valuation of foodstuffs. Selection, preparation and use of home-grown and purchased foods. The balancing of rations for all types of stock. Methods of feeding. Mineral requirement. Effect of foods on health.

Horses.—Points of the horse. Conformation and situation of disease. Examination for soundness. Dentition and age.

Stable Management.—Handling and management of horses in the stable. Stable fittings and appliances. Stable vices. Routine work, including feeding, watering, grooming, etc. Horse clothing and bandages. Exercising horses. Types of harness and saddlery, and the fitting, adjustment and care of same. Shoeing.

Farm Horses.—Breeds of heavy and light draught horses. Selection, feeding, housing and management of farm horses. Management of in-foal mares and young stock. Breaking and working young horses. The utilization of horses in modern farming.

Light Horses.—Breeds of harness and saddle horses, cobs and ponies. Breeding, feeding and general management. Breaking and training. Suitability of light horses and cobs for special purposes and for light land or small farms.

Cattle.—Classification of breeds. History and development of British cattle.

Beef Cattle.—Characteristics. Breeds. Selection, feeding, housing and management of store and fattening cattle. Winter and summer beef production. Baby beef. Marketing of fat cattle. Rearing of beef breeds including herd management and calf rearing. Estimation of weights and values.

Dual Purpose Cattle.—Characteristics. Breeds and their value.

Dairy Cattle.—Characteristics. Breeds, selection, breeding and herd development. Milk recording. Feeding, housing and general management of a dairy herd. Systems of calf rearing.

Milk Production.—Summer and winter milk production. The handling and marketing of milk. Modern developments in the dairy industry. Graded milks. Milk products. The maintenance of a pure milk supply.

Sheep.—Down, long-wool and mountain breeds. Breeding, feeding, and management of sheep. Arable, grassland and hill flock management. Valuable characteristics of wool. The grading, marketing and treatment of wool. A shepherd's calendar.

Pigs.—Breeds, bacon and pork characteristics. Rearing, feeding and management of pigs. Systems of pig farming. Pig recording. Suitability of pigs for bacon production. Market requirements. Bacon-curing methods.

Poultry.—Breeds of fowls ; breeding, hatching, rearing, feeding, housing and management ; fattening of poultry.

Crop Husbandry

Soils.—Relation to geological conditions. Formation, composition properties and classification. Types. Suitability for cultivation or grazing. Indications of fertility and exhaustion. Soils in relation to systems of farming.

Climate.—The effects of climate on soil cultivation and cropping systems. Rainfall. Temperature. Prevailing winds and weather forecasts.

Soil Improvement.—Reclamation. Drainage, irrigation, warping, Bare and summer fallowing. Application and effect of lime and chalk.

Land Drainage.—Relation to geological formation. Objects, systems, methods and cost of drainage. Mole drainage. Drainage of sheep farms. Surface drainage.

Soil Cultivation.—Importance of good soil texture. Tillage operations. Subsoiling. Deep cultivation. Surface tillage. Use of implements of cultivation. Horse, tractor and steam cultivation.

Manures.—Classification of manures. Nitrogenous, phosphatic, potassic and general manures. Compound manures. Farmyard manure. Treatment of the manure heap and disposal of liquid manure. Storage. Mixing manures. Green manuring. Artificial farmyard manure. Valuation. Time of application and amount used per acre. Unexhausted values. Plant growth in relation to manuring. Symptoms of manurial deficiencies. The use of manures as an aid to weed control.

Farm Crops.—Classification. Methods of improvement. Adaptation to soils and climate. Statistics.

Rotations.—Objects. Economic values. Advantages and disadvantages. Early and modern rotations. Adaptation of rotations to systems of farming.

Cereal and Pulse Crops.—Classification, varieties, acreage, and distribution. Preparation of soil, seeding and time of sowing, manuring and cultivation. Place in rotation. Harvesting. Storage and uses. Marketing. Weeds and their control. Estimation of yield and value.

Sugar Beet, Root and Green Crops.—Treatment as above. Clamping, storage and utilization.

Potatoes.—Treatment as above. Importance of change of seed with special reference to virus diseases and their effect on production of "seed." Wart disease and the use of immune varieties. Results of recent experimental work and production and testing of new varieties.

Forage Crops.—Treatment as above. Types and varieties of forage plants. Forage mixtures suitable for soiling, ensilage and hay. Management of ensilage.

Special Crops.—The cultivation of hops, fibre and seed crops. The use of catch crops.

Grassland.—Types of grassland. The improvement of grassland by drainage, irrigation, clearing, fencing, mowing and grazing, mechanical treatment, manuring and the use of lime. The management of grass land. Rotation grazing. Methods of stocking. The control of grassland weeds. The renovation of grassland.

Hay Production.—Manuring of the hay crop. Methods of haymaking. The management of the aftermath.

Laying Down of Land to Grass.—Preparation of the seed bed. Methods of sowing. Nurse crops. Manuring. General management. Seeds mixtures. Suitable constituents. Competition between species. The importance of strain. The utilization of wild white clover. Factors influencing plant establishment. Seed rates. Variations in mixtures for special conditions and purposes. Temporary leys and their use in arable farming. The effect of temporary leys in improving the fertility and physical condition of soils. The cultivation and use of lucerne, sainfoin, red clover, Italian ryegrass, timothy, crimson clover, trefoil, white clover, etc., as pure crops. The production of grass and clover seeds.

Experimental Technique.—Introduction to the question of design and lay-out of field experiments and calculation of the errors involved.

Farm Management

Systems of Farming.—Economic conditions determining the use of land. Systems of arable, stock and mixed farming. Specialized and intensive systems of agriculture.

Farm Selection.—Selection of district and type of farming. Capital requirements. Selection of the farm. Location. State of fertility and productive power, transport and markets. Financial outlay and possible returns. Occupying ownership and tenancy.

Farm Valuations.—Methods of making the farm valuation. Records of a holding. Customs of the country. The ingoing valuation.

Cropping Systems.—The soil factor. Use and modification of rotations to suit economic conditions. Live stock in relation to cropping.

Farm Lay-Out.—The division and lay-out of the farm for economical working. Planning the cropping system. Stocking capacity and methods of grazing and foddering live stock.

Farm Equipment.—Equipment of agricultural land. Buildings required on different classes of farms. Economical arrangement of farm buildings. Accommodation for live stock, produce and machinery.

Farm Organization.—The organization of a farm with a view to optimum production and economy of labour. Farm labour and wages. Sub-division of labour. Farm operation and routine work. The administration of the farm business. Gauging and forecasting markets.

Farm Capitalization.—Landlord and tenant's capital. Capital required to stock a farm. Allocation of capital. Stocking, income and expenditure of typical farms. Farm profits and factors affecting profits.

Agricultural Law.—The elements, with special reference to the relation of landlord and tenant. Agricultural Holdings Act. Recent legislation affecting agriculture.

Veterinary Hygiene

A. Elementary Anatomy and Physiology of Farm Animals

Skeletal System.—Structure and classification of bones, cartilage, ligaments ; a general description of the skeleton of farm animals ; a typical joint and its parts.

Muscular Systems.—Structure and function of voluntary and involuntary muscles.

Nervous System.—A general description of the brain, spinal cord and meninges ; distribution and function of nerves ; organs of special sense—the eye and ear.

Vascular System.—Heart, arteries, veins, blood, the circulation ; foetal circulation.

Lymphatic System.

Respiratory System.—Trachea, lungs, thorax, pleura, respiration.

Alimentary System.—Dentition and ageing of animals ; a comparative study of the alimentary tracts of the horse, ox, sheep and pig ; prehension of food, saliva, mastication, deglutition, vomition, rumination, digestion and absorption ; structure and function of the liver and pancreas.

Excretory System.—Kidneys, ureters and bladder, urine, sweat glands, sweat.

Reproductive System.—Comparative study of the genital organs of horse, ox, sheep and pig ; reproduction ; physical and physiological properties of milk.

Ductless Glands.—Spleen, thyroid, thymus, suprarenals, pituitary.

The Anatomy of the Foot.

B. General Hygiene

The principles of hygienic housing of animals, including general construction and arrangement, drainage and ventilation.

Food and feeding and water supplies.

Proximate principles of food, Vitamins.

Signs of health and disease, variation in the pulse, respirations and temperature in health and disease.

Methods of restraint and the administration of medicines.

The principles of shoeing.

C. Diseases of Farm Animals

Definition of disease.—General symptoms of disease.

Wounds, abscesses and injuries, and their general treatment.

Lameness.—Common causes and first aid.

Diseases of the foot.—Horses, cattle and sheep.

Causes, prevention and recognition of the common non-infectious diseases of the domestic animals.—Diseases of the alimentary tract ; respiratory tract ; circulatory system ; urogenital organs ; skin.

Dietetic diseases.—Deficiency diseases.

Contagious diseases of farm animals.—Outlines of bacteriology and methods of spread of disease. The principles of immunity, preventive inoculation and use of diagnostic agents. Collection of blood and samples.

Symptoms and control of contagious diseases ; abortion ; actinomycosis ; anthrax ; black-quarter ; foot and mouth disease ; Johne's disease ; tuberculosis ; navel-ill and other diseases of young stock, lamb dysentery ; strangles and equine influenza ; swine fever and swine erysipelas ; coccidiosis ; bacillary white diarrhoea of poultry.

Diseases due to larger parasites.—External and internal—such as ticks, lice, acari, warble and bot flies ; and parasitic worms such as liver flukes, round worms and tape worms.

Obstetrics.—The care of animals before, during and after parturition ; normal and abnormal presentations ; foetal membranes ; prolapse of the uterus ; milk fever ; metritis ; diseases of the mammary gland ; sterility ; methods of castration and spaying.

General principles of disinfection.

REVISED REGULATIONS FOR THE B.Sc. EXAMINATION IN AGRICULTURE FOR EXTERNAL STUDENTS

The First Examination will be open to External Students in and after 1954 ; the Second Examination in and after 1955 and the Final Examination in and after 1956. For final dates of examinations under the old regulations, see page 1502.

INTRODUCTORY NOTES

1. Candidates for the Degree of Bachelor of Science (Agriculture) as External Students are required to have satisfied the minimum University and Faculty entrance requirements, to have been registered as External Students for the Degree, to hold qualifications as set out below for Direct Entry to the Degree Examinations, and to pass the First Examination, the Second Examination and the Final Examination. Successful candidates will be awarded First Class Honours, Second Class Honours, or a Pass Degree.

2. The standard of the Final Examination is that which would normally be required of a whole-time student after a course of study extending over three academic years ; the First Examination being taken after one year, the Second Examination being taken after two years, and the Final Examination being taken three years after having satisfied the Direct Entry requirements.

FACULTY REQUIREMENTS

A candidate who has satisfied the minimum University entrance requirements by means of a General Certificate of Education on or after 1 May, 1951 will be required to have passed in Mathematics at Ordinary or Advanced level in that examination or an accepted equivalent.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the **First** Examination, each candidate must:—
 - (a) have satisfied the minimum University and Faculty entrance requirements and have been registered as an External Student preparing for the B.Sc. (Agriculture) Degree ;
 - (b) have qualified in Chemistry and *either* Biology *or* Botany *or* Zoology by :—
 - either* (i) having passed the Intermediate Examination in Science *or* Agriculture with these subjects ;
 - or* (ii) having obtained a Certificate *or* Certificates awarded on a Higher School Examination approved by the Ministry of Education as a second examination in secondary schools, with these subjects at main subject standard ;

(Candidates who have not qualified for the award of a Higher School Certificate but who have been permitted to count successes gained in 1949 and 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirement, may also count either or both of these subjects, where appropriate, towards the admission requirements.)

- or (iii) having obtained a General Certificate or Certificates of Education awarded by one of the approved University examining bodies with passes in these subjects at Advanced Level;
- (c) have carried out a course of study approved by the Council for External Students;
- (d) have obtained approval of candidature for the examination.
2. To be admitted to the **Second** Examination, each candidate must :—
- (a) have passed the First Examination, but a candidate who has previously entered for the First Examination and failed to satisfy the examiners or who has passed in one Section only of the First Examination will be permitted to enter for the Second Examination on the same occasion as he enters for re-examination in the whole or the remaining Section of the First Examination;
- (b) have carried out a course of study approved by the Council for External Students;
- (c) have obtained approval of candidature for the examination.
3. To be admitted to the **Final** Examination, each candidate must :—
- (a) have been registered as an External Student at least three academic years previously;
- (b) have completed the first Examination at least one academic year previously;
- (c) have passed the Second Examination, but a candidate who has previously entered for the Second Examination and failed to satisfy the examiners will be permitted to enter for the Final Examination on the same occasion as he enters for re-examination in the Second Examination;
- (d) have carried out a course of study approved by the Council for External Students;
- (e) have obtained approval of candidature for the examination.

DATE OF EXAMINATION

The First, Second and Final Examinations shall take place once in each year, and shall commence on the first Thursday after 3 June.

REGISTRATION

1. Candidates should normally register during the period September-December in the year next but two preceding the year in which they propose to enter for the Final Examination in Agriculture. Applications for registration received after 31 December will only be considered under the regulations governing Late Registration.

2. Candidates will be required to submit with their application for registration a detailed statement of their proposed course of study including details of the laboratory facilities which they will have available and of the arrangements which they propose to make for gaining the required experience in practical farming and experimental method. This statement must be made on the appropriate form to be obtained from the External Registrar.

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3. Each application for permission to register for the B.Sc. (Agriculture) Degree will be considered individually. Applications will not be accepted from candidates resident outside the United Kingdom.

APPROVAL OF CANDIDATURE

1. Each External Student who has been registered for the Degree of B.Sc. (Agriculture) will be required to apply for approval of candidature for the First, Second and Final Examinations, and to state the year in which he proposes to present himself for each of the examinations.

2. Applications should normally be made during the period October-December in the year preceding that in which the candidate proposes to enter for the First Examination, and not later than 31 December in that year.

ENTRY TO EXAMINATION

The candidate lists for the First, Second and Final Examination will be opened on 15 December. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 January, and the candidate lists will be closed on 1 February.

No entry can be accepted after the candidate lists have been closed.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
First Examination	4	4
Re-entry in one Section	2	2
Second Examination	2	2
Final Examination	6	6

2. All cheques should be made payable to the University of London or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1., University of London Account".

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

TIME TABLE

The examination shall be conducted in the order shown on the timetable, which will be sent to each candidate as soon as practicable after the entry closes.

SCHEME OF EXAMINATION

1. Candidates for the B.Sc. (Agriculture) Degree must satisfy the examiners in the following examinations :—

(i) The **First** Examination which will be divided into two Sections :—

Section I—Physical Sciences

Section II—Biology

Section I will consist of three written papers of three hours each and three practical examinations of three hours each.

Section II will consist of two written papers of three hours each and two practical examinations of three hours each.

A candidate will be required to take both Sections of the examination on the same occasion, but a candidate who satisfies the examiners in one Section only may be credited with a pass in that Section and be permitted to complete the First Examination by taking the remaining Section at a subsequent examination.

- (ii) The **Second Examination** which will consist of one written paper of three hours in **Economics**.

A candidate will normally be expected to take the Second Examination in the year subsequent to that in which he passes the First Examination, but a candidate who has previously failed in one or both Sections of the First Examination will be permitted to enter for the Second Examination on the same occasion as he re-enters for the whole or for the remaining section of the First Examination.

A candidate who enters on the same occasion for the Second Examination and for re-examination in the First Examination or in one Section of the First Examination, and who satisfies the examiners in one examination but fails in the other, will be credited with the examination in which he passes.

- (iii) The **Final Examination** which will consist of nine written papers of three hours each as follows:—

Crop Production	3 papers
Animal Production	3 papers
Rural Economy	2 papers
Essay	1 paper covering a wide choice of topics together with two days of practical laboratory examination and an oral examination on an approved farm.

A candidate will not be permitted to enter for the Final Examination until one year after he has satisfied the examiners in both Sections of the First Examination.

A candidate who has not already satisfied the examiners in the Second Examination will be required to enter for that examination at the same time as he enters for the Final Examination. A candidate who takes the Second Examination together with the Final Examination shall have no report made on his performance in the Final Examination if he fails in the Second Examination, but a candidate who passes in the Second Examination and fails in the Final Examination shall be credited with the pass in the Second Examination.

2. No candidate will be allowed to pass the examination in a subject which includes a practical examination unless he satisfies the examiners both in the written and in the practical part of that subject.

3. At the oral examination candidates will be required to produce a note-book recording a year's operations on a farm, and the purpose of the oral examination shall be to determine the extent of the candidate's personal acquaintance with the routine of farming.

4. In addition to the oral examination which forms an integral part of the Final Examination, the examiners shall be at liberty to test a candidate by oral questions in any subject of the examination.

5. Candidates shall not be approved by the examiners unless they have shown a competent knowledge of each of the subjects of the examination.

6. All answers to examination questions shall be written in English unless instructions are given to the contrary.

7. There are no exemptions from any subject or part of these examinations.

NOTIFICATION OF RESULT

1. On 25 July the External Registrar shall publish a list of the candidates who have passed the First Examination, the Second Examination and the Final Examination. The Pass Lists for each examination shall be arranged in alphabetical order, and the Pass List for the Final Examination shall be divided into First Class Honours, Second Class Honours and Pass, with the successful candidates in alphabetical order in each section of the Pass List.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates for the B.Sc. (Agriculture) Examination *under revised Regulations* who have completed the First and Second Examinations and who have completed more than half of the Final Examination are eligible to apply for an Aegrotat Degree.

(2) Application from, or on behalf of, students must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the Examination.

(3) An Aegrotat Degree will not be awarded unless the Examiners consider that, in the work which the candidate has submitted at such part of the Examination as he has attended, he reached a standard which, if also reached in the remainder of the Examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same Examination, but may proceed to a second or higher Degree on complying with the Regulations of such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.Sc. (Agriculture) under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES

FIRST EXAMINATION

Section I—Physical Sciences

Physics

General properties of solids, liquids and gases.

Principles of mechanics, heat, light, electricity.

Physical Chemistry

Law of Mass Action.

Osmosis.

Electrochemistry of Solutions.

Thermochemistry.

The Colloidal state.

Organic Chemistry

Introductory organic chemistry.

Chemistry of the more important compounds which occur in plants and animals

Enzyme action.

Geology and Pedology

Introductory Geology.

The geological basis of pedology.

Section II—Biology

The Living Organism. Cell organisation.

Cell division and tissue differentiation.

Plant and animal structure and function with special reference to the seed plant and mammal.

The individual life cycle : Growth, development, differentiation, maturation, reproduction.

Physiology : integration of form and function and correlation with environment ; organic regulations.

Seasonal adaptations of plants and animals.

Ecology : the factors determining the nature and distribution of plant and animal communities.

Evolution. Introduction to Genetics.

SECOND EXAMINATION

Economics

Economics as a Social Science and its relation to the natural Sciences.

Definition of principal economic terms.

The price mechanism. The determinants of supply and demand.

Comparative advantage. The laws of increasing and diminishing returns.

The concept of economic equilibrium.

Economic characteristics of the factors of production ; land, labour, capital, management and organisation.

Distribution of net outputs : wages, rent, interest and profit.

Nature and functions of money. The problem of saving and investment.

Economic activities of the State.

Elements of international trade.

FINAL EXAMINATION

Agriculture : Crop Production

Soils and their Management

Genesis, nature and properties of soils.

Classification of soils.

Chemical, physical and biological attributes of soils affecting plant growth.

Soil structure and factors influencing structure.

Soil fertility and its maintenance. Soil micro-organisms.

Organic and inorganic fertilisers. Reactions of fertilisers with the soil complex. Mineral deficiencies, toxicities and mineral balance.

Control of soil moisture ; irrigation ; drainage and cultivation methods.

Soil erosion and its control. Land reclamation.

Interpretation and application of soil surveys.

Assessment of soils for agricultural purposes.

Growth and Form of Agricultural Plants

Physiology of germination, growth and development of crop plants and the influence of environmental factors on these processes.

Chemical and physical aspects of germination, growth, ripening and processing and storage of crop plants.

Plant competition, associations and successions.

Systematic classification and identification of agricultural plants and weeds.

Plant Improvement

Origins of cultivated crops. Objects and methods in plant breeding and selection.

Multiplication and maintenance of true strains. Plant introduction.

Crop Husbandry

The principal farm crops ; their distribution and optimum environment ; their cultivation, harvesting, storage and use.

Grassland management and utilisation of herbage.

Mechanisation of crop production ; the selection, use and management of machinery and equipment.

Crop Protection

Biology of diseases and pests of agricultural crops.

Principles of plant infection and protection.

Chemistry and mode of action of substances used for protection of crops.

Husbandry, biological and chemical methods of pests, disease and weed control.

Agriculture : Animal Production

Structure and Function

Elements of anatomy and physiology of farm animals.

Reproduction and fertility. Milk secretion. Growth and development.

Animal Nutrition

Metabolism. Food requirements. Feeding standards. Characteristics of feeding stuffs.

Animal Improvement

Evolution of breeds. Variation. Adaptation. Heritability.

Selection. Methods of animal breeding. Herd and flock improvement schemes.

Animal Husbandry

Farm animals : factors affecting their distribution and importance.

The maintenance and management of herds and flocks.

Buildings, machinery and equipment.

Animal Health

Maintenance of health ; nutritive status in relation to disease.

Biology of pathogenic organisms and of endo- and ecto-parasites.

The more important diseases and ailments of livestock : their prevention and control.

Animal Products

Physical and chemical nature ; processing ; quality standards.

Agriculture : Rural Economy

The Development of Agriculture

Historical, social and economic factors affecting land use. Primitive agricultural societies ; subsistence farming ; commercial farming.

The structure of British farming. Interdependence of farming systems.

Relationship of British to world agriculture.

Organisation of Agriculture

Agriculture and the State. Function and organisation of agriculture in the national economy.

Land, labour, capital and management and their economic employment in agriculture.

Marketing of farm products. Purchase of farm requisites. Producer co-operatives.

Factors affecting farm prices. Index numbers.
Economic investigations.

Farm Management

Farm selection and appraisal. Systems of tenure and conditions of entry.

Farm layout in relation to systems of farming and economy of working.

The equipment of the farm.

Planning of farm operations.

Organisation and management of labour.

Analysis of farming efficiency.

**MASTER OF SCIENCE (AGRICULTURE)
REGULATIONS FOR THE REGISTRATION OF
EXTERNAL STUDENTS FOR HIGHER DEGREES**

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma or post-graduate certificate will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry to the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee, provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted

to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and withdraws, fails or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required so cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted. A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed in the Regulations, obtain the necessary entry papers, and return them to the University with the examination fee.

FEES							£	s.
Registration Fee	..	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	..	2	2

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have taken the Degree of B.Sc. (Agriculture) in this University not less than two academic years previously (in exceptional circumstances this interval may be reduced); and (b) have been registered as an External Student preparing for the M.Sc. (Agriculture) Examination at least twelve months before the last date of entry.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the fourth Monday in May, or if that day be Whit Monday on the following Tuesday.

ENTRY TO EXAMINATION

The candidate list closes on 1 February. Any External Student duly registered for this examination may make his entry any time during the preceding six weeks; no entry can be accepted after the closing of the candidate list. Every candidate when making his entry must send the original copy of the approved syllabus. Two copies of the dissertation and/or thesis must reach the University by 1 March, bound in accordance with the regulations obtainable from the External Registrar.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Every candidate entering for the M.Sc. (Agriculture) Examination must pay a fee of £15 15s.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but before 15 April may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. x).

SCHEME OF EXAMINATION

1. Not less than one year before he desires to enter for the examination the candidate shall submit for the approval of the Council for External Students the title of the subject in which he proposes to present himself, together with a statement of the proposed method of treatment. Applications must be submitted in duplicate on the prescribed form and must include a clearly stated syllabus of the subject.

2. The Council's approval of title and the approved syllabus of the subject, whether in their original or in an amended form, will be communicated to the candidate in writing, and on this the examination will be based. This syllabus of the subject must be sent to the University when the candidate makes his entry.

3. The examination shall be by the following tests :—(a) written papers, (b) an oral examination, (c) a practical examination, (d) a dissertation ; or such of them as may be determined by the Council in each case, but no candidate shall be permitted to pass without an oral examination.

4. The dissertation shall be an ordered and critical exposition of existing knowledge of the subject in which the candidate presents himself. The candidate shall be required to submit two copies of the dissertation.

5. If a candidate so desire, he may submit two copies of a thesis which is a record of original work as part of his qualifications. If the examiners consider the thesis to be of such special excellence as to justify it, the candidate may be exempted from part of the examination set out in paragraph 3 above.

6. A candidate will not be permitted to submit a dissertation or thesis for which a Degree has been conferred upon him in this or any other University. Nevertheless a candidate shall not be precluded from incorporating work which he has already submitted with a view to a Degree in this or any other University in a thesis covering a wider field, provided that he shall indicate on his entry form and also on his thesis any work which has been so incorporated.

7. If a candidate submits a thesis, he will be required to forward to the University a short abstract thereof comprising not more than 300 words.

8. Candidates will be informed at the time when their syllabus is approved whether or not they will be required to present a dissertation, but only after they have made entry to the examination will they be informed as to what papers and practical examination they will be required to take.

9. There is no prescribed list of subjects ; the following are given as suggestions :—

- (i) Some branch of Agricultural Chemistry, such as Soils ; Nutrition of Plants ; Nutrition of Animals, etc.
 - (ii) Some branch of Agricultural Botany, such as Plant Breeding and Genetics ; applied Plant Physiology ; applied Plant Pathology.
 - (iii) Animal Breeding, including Physiology and Genetics.
 - (iv) Some branch of Agricultural Zoology, such as Economic Entomology ; Agricultural Parasitology.
 - (v) Agricultural Economics and Accountancy.
 - (vi) Some branch of Agricultural Geology, such as Pedology.
10. The thesis or dissertation must be written in English.

TIME TABLE

The order of the examination will be sent to candidates as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. A list of candidates who pass to the satisfaction of the examiners, arranged in alphabetical order, shall be published at the University.
2. A copy of the Pass List will be sent to each successful candidate. An individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners shall be laid before the Senate for approval in July.
2. A diploma for the Degree of M.Sc. (Agriculture) under the seal of the University shall be delivered to each successful candidate.
3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

THESES AND DISSERTATIONS

Copies of all successful theses or dissertations, together with any subsidiary contributions submitted, will be deposited for reference in the University Library. Any copies of theses and dissertations which are not required by the University after the examination has been completed will be returned to the candidate.

RESEARCH FUND

The Senate has at its disposal a Research Fund from which grants may be made to individuals for the provision of materials and apparatus for specific projects of research. Any candidate for an External Higher Degree who desires to be considered as an applicant for a grant should in the first place communicate with the External Registrar.

DOCTOR OF PHILOSOPHY AND DOCTOR OF SCIENCE

Candidates who have obtained the Degree of B.Sc. (Agriculture) will be permitted to proceed to the Ph.D. and D.Sc. Degrees in accordance with the Regulations in Science for External Students which may be obtained on application to the External Registrar.

UNIVERSITY OF LONDON



REGULATIONS FOR DEGREES IN HORTICULTURE for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters, candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Candidates for the Degree of Bachelor of Science (Horticulture) as External Students are required to satisfy the minimum University and Faculty entrance requirements, to have been registered as External Students preparing for the Degree of B.Sc. (Horticulture), to pass or obtain exemption from the Intermediate Examination and to pass Parts I and II of the Final Examination.

The standard of the Final Examination is that which would normally be required of a whole-time student after a course extending over three academic years after completing the minimum University and Faculty entrance requirements, or two academic years after completing the Intermediate Examination.

INTERMEDIATE EXAMINATION IN HORTICULTURE

FACULTY REQUIREMENTS

A candidate who has satisfied the minimum University entrance requirements by means of a General Certificate of Education on or after 1 May, 1951, will be required to have passed in Mathematics at Ordinary or Advanced level at the Certificate Examination or an accepted equivalent.

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination, each candidate must (a) have satisfied the minimum University and Faculty entrance requirements and (b) have been registered as an External Student preparing for the Degree of B.Sc. (Horticulture).

Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced a course of study. Students for the July examination should normally apply for registration during the period October to December of the year preceding the examination, and not later than 25 February. **Students who apply to take the Final Examination less than three academic years from the date of registration are warned that an application for late registration, with a late fee of £2 2s., will be necessary when they apply for approval of candidature for the final examination.**

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence during the week beginning on the first Monday after 28 June.

ENTRY TO EXAMINATION

The candidate list will be opened on 12 February. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 18 March, and the candidate list will be closed on 25 March. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

Whole examination	.. .. .	£	s.
Referred subject	.. .. .	6	6
		2	2
<i>Exemption in virtue of another examination :</i>			
Complete exemption	.. .. .	No	fee
Partial exemption, each remaining subject taken	..	2	2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

1. The examination, which is a pass examination only, consists of the following subjects :—

- (1) **Chemistry** 2 papers and a practical examination.
- (2) **Botany** 2 papers and a practical examination.
- (3) **Zoology** 1 paper and a practical examination.
- (4) *Either* **Geology** 1 paper and a practical examination.
or **Applied Physics** .. 1 paper and a practical and an oral examination.
- (5) **Garden Operations** .. Inspection of note-books or diaries of practical work in the garden.

2. The examiners shall be at liberty to test any candidate by means of oral questions.

3. No candidate offering an experimental science subject will be allowed to pass unless he satisfies the examiners in the practical part, as well as in the written part, of the examination. Candidates must bring to the practical examination their practical note-books containing a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory, for inspection by the examiners. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

4. Candidates shall not be approved by the examiners unless they have shown a competent knowledge in all of the five subjects taken.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

6. A candidate who has passed the Intermediate Examination in Horticulture will not be permitted to re-enter.

DIARIES

1. Every candidate will be expected to have acquired an elementary knowledge of Garden Operations and must submit at the examination diaries containing a record of garden work. They must indicate clearly the garden work carried out by the candidate *either* during one session (October to June inclusive) *or* during one calendar year, and may be supplemented by records of other seasonable work seen in progress, notes of cultural operations, etc.

2. For the purposes of these diaries no restriction is placed upon the country in which the garden operations were carried out.

3. The candidate's name and, later, his examination number, must be boldly written on the outside of the cover of the diary. Further, a certification in the candidate's own handwriting must be attached to the inside of the cover stating (a) the period covered by the diary; (b) that the diary is the work of the candidate. This certificate must be counter-signed by the teacher, if any, under whom the work has been carried out.

4. A candidate who passes in Garden Operations but who fails to pass the whole examination shall be credited with a pass, and shall be exempted from examination in this subject at any subsequent Intermediate Examination.

REFERENCE

1. A candidate who enters for the whole examination on one and the same occasion, but who fails to reach the required standard in one subject only, may be referred, i.e., he may be permitted to re-present himself for examination in that subject alone or in another subject allowed by the regulations at one or more subsequent Intermediate Examinations in Horticulture. Nevertheless a candidate who has been exempted from the examination in Garden Operations may also be referred on the recommendation of the examiners.

2. The examiners will recommend that a candidate be referred only if his failure in one subject is not serious and if his performance in the remaining subjects is reasonably good.

3. A candidate who has completed the Intermediate Examination after having been referred in one subject will be deemed for all purposes to have passed the examination in question on the date of completion.

EXEMPTIONS

In virtue of Higher School Certificates and the General Certificate of Education :—

1. (a) A candidate who (i) holds a Certificate or Certificates awarded on a Higher School Examination recognized by the Ministry of Education as an approved second examination in Secondary Schools and (ii) is qualified to proceed to the External Intermediate Examination in Horticulture, may apply for exemption in respect of any subject or subjects corresponding to those endorsed on his Higher School Certificate or Certificates on the Main (Principal) or Additional Subject standard provided that the subject(s) correspond to those which may be offered at the Intermediate Examination in Horticulture.

Candidates who have not qualified for the award of a Higher School Certificate but who have been permitted to count successes gained in 1949 and 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirements may apply for exemption in corresponding subjects of the Intermediate Examination in respect of these two subjects.

(b) A candidate who (i) holds a General Certificate or Certificates of Education awarded by one of the approved University Examining Bodies, and (ii) is qualified to proceed to the External Intermediate Examination in Horticulture, may apply for exemption at that examination in any subject or subjects passed at the Advanced Level, provided that the subject(s) correspond to those which may be offered at the Intermediate Examination in Horticulture.

(c) From 1 September 1952, all fees payable in respect of complete or partial exemption from the Intermediate Examination are abolished. Candidates who are required to take part of the examination to complete a partial exemption already held by virtue of another examination, whether of the University or other examining body, will be required to pay entry fees for the subject or subjects which they are required to take, but no additional fee for exemption from the remaining part of the examination. Fees paid between 1 September 1949, and 1 September 1952, for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for a Final Examination taken between 1 September 1952, and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

(d) No certificate will be issued to candidates in respect of such exemption, but a notification will be sent to duly qualified candidates at their request when the exemption has been completed, stating that they are qualified to proceed to the B.Sc. (Hort.) Examination on complying with the Regulations in all respects.

(e) A candidate who is required to pass in two or more subjects in order to complete his Intermediate qualification must satisfy the examiners in all such subjects at one and the same examination, and if he is only partially successful he shall be required on re-entry to offer all such completing subjects again.

(f) A candidate may, if he so desires, complete his exemption qualification by passing in the required additional subjects at a subsequent Higher School Examination or General Certificate of Education (Advanced Level) Examination, provided the subjects offered conform to the regulations. In this case all the subjects required must be passed at one and the same Higher School Examination or General Certificate of Education (Advanced Level) Examination.

In virtue of other examinations of this University :—

2. Candidates who have passed the Internal Intermediate Examination in Horticulture of this University are entitled to exemption from the External Intermediate Examination in Horticulture.

3. Any candidate, whether Internal or External, who has passed Intermediate Arts, Science, or Engineering of this University, shall be exempted from examination in any subject in which he passed at such examination, and may thereafter be examined in any remaining subjects of the Intermediate Examination in Horticulture. Any candidate who has passed in Physics at Intermediate Arts or Science of this University shall be exempt from Applied Physics.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 20 August the External Registrar shall publish a list of the candidates who have passed, arranged in alphabetical order.

2. A copy of this Pass List will be sent to each successful candidate, and an individual notification will be sent to each unsuccessful candidate.

3. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

4. Certificates of having passed the examination will not be issued except to qualified students applying for them.

5. Each successful candidate will receive a Detailed Report on his results in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass.

6. Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—

D—Failure ; E—Bad Failure.

7. Failure in a subject which includes a practical or oral examination indicates failure in the subject as a whole and no further information can be given regarding the candidate's performance in the various parts of the examination.

8. Detailed Result Reports will be sent to successful candidates from one to two months after the publication of the ordinary Pass List, but will be sent to unsuccessful candidates at the time when they are notified of the result of the examination.

9. Educational institutions in receipt of annual grants from public funds may apply for a statement of the detailed results of their candidates ; such applications must be accompanied by a list of the candidates' names, the name of the examination and the date at which it was taken. The results cannot be communicated until about two months after the publication of the Pass List, and each institution will have communicated to it the results of those candidates only who are registered as pursuing a course of study at that institution.

SYLLABUSES

Chemistry

[Two papers and a practical examination.]

The following outline is not to be regarded as a rigid syllabus of instruction, but is given in continuation of the syllabus of the Ordinary level of the General Certificate of Education of the University of London for the general guidance of candidates as indicating the range of the written part (I) and the experimental part (II) of the examination in Chemistry.

The whole syllabus is to be treated in an elementary manner and as far as possible experimentally. More importance will be attached to a sound understanding of fundamental principles and standard experimental methods than to an acquaintance with advanced theoretical ideas.

I

The laws of chemical combination. History of the discovery of the composition of air and water. The atomic and molecular theories. Equivalent, atomic, and molecular weights and methods for determining them. Valency. Atomic structure in so far as it is necessary to explain simply (a) the different types of valency, and (b) the periodicity in the properties of the elements of atomic number 1 to 18.

The periodic classification of elements, as illustrated by the chemistry of : H, He, Ne, Ar, Li, Na, K, Cu, Ag, Be, Mg, Ca, Sr, Ba, Zn, Cd, Hg, B, Al, C, Si, Sn, Pb, N, P, As, Sb, Bi, O, S, Cr, F, Cl, Br, I, Mn, Fe, Co, Ni. The treatment of the descriptive chemistry should be extended to include the preparation and properties of the more important compounds of : H, B, C, N, P, As, O, S, Cl, Br, I, Na, K, Cu, Ag, Mg, Ca, Ba, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe.

[*Note.*—For the purpose of this syllabus, “important compounds” means (a) compounds in common laboratory use for work up to Intermediate standard, or (b) compounds which have well-known uses.]

Sources and common processes for the manufacture or production of : H, He, Ne, Ar, O, N, Cl, Br, I, C, P, S, Na, Cu, Ag, Mg, Zn, Hg, Al, Sn, Pb, Cr, Mn, Fe, Ni.

[*Note.*—A knowledge of metallurgical and other manufacturing operations will not be required except in broad outline.]

Common processes for the manufacture of the following materials : Na_2CO_3 , NaHCO_3 , NaOH , CaO , SO_2 , H_2SO_4 , HN_3 , HNO_3 , HCl , hypochlorites, chlorates, bleaching powder, CO_2 , and the fuel gases.

The chemistry involved in inorganic qualitative and volumetric analysis (*see* Part II).

The chemistry involved in the detection of C, H, N, Cl, Br, I, and S, in organic compounds. Calculation of empirical and molecular formulae from experimental data.

Elementary principles of Organic Chemistry including the following : The quadrivalence of carbon and its power of forming stable bonds with non-metals and especially with itself. Relationship of structural formulae (excluding, except as mentioned below, the stereochemical aspect) of saturated open-chain hydrocarbons containing not more than 4 carbon atoms. Homology, Isomerism. Candidates should be able to give examples of structural isomerism, and should know why plane formulae are not universally acceptable, but they are not expected to be familiar with the formulae or behaviour of specific mirror-image or geometrical isomerides.

Typical properties conferred by substituents, emphasis being laid on the behaviour of groups rather than on the technique of preparation or recognition of individual substances. Nevertheless certain simple substances (mentioned below in parentheses) should be included among those selected as types ; candidates will be expected to be familiar with the usual origin or method of preparation and characteristics of these compounds. Substitution in saturated open-chain hydrocarbons (methane) by chlorine. The radicals $\text{C}_n\text{H}_{2n+1}$. Reactions of compounds $\text{C}_n\text{H}_{2n+1}\text{Cl}$ (Br or I) with alkali and ammonia. Alcohols of the general formula $\text{R}\cdot\text{CH}_2\cdot\text{OH}$ (methyl and ethyl alcohols), $\text{R}_2\text{CH}\cdot\text{OH}$, $\text{R}_3\text{C}\cdot\text{OH}$, and their behaviour towards sodium, phosphorus halides (or phosphorus together with halogens), hydrogen halides, oxidising agents, and dehydrating agents, including sulphuric acid. Formation of ethers (diethyl ether). Unsaturated hydrocarbons, C_nH_{2n} (ethylene). Addition of H_2 , Cl_2 , Br_2 , and HBr to olefins. Action of alkali on the products formed from olefins by addition of Cl_2 or Br_2 (acetylene). The carbonyl group in aldehydes, $\text{R}\cdot\text{CHO}$, and ketones, R_2CO (formaldehyde, acetaldehyde, acetone). The action of reducing and oxidising agents on these substances and the addition of HCN to them. Monobasic carboxylic acids, $\text{R}\cdot\text{CO}_2\text{H}$ (formic and acetic acid). Reaction of acids with PCl_5 (acetyl chloride) and the behaviour of acid chlorides with water, alcohol, and ammonia. Esterification of acids (ethyl acetate) and the behaviour of esters towards acids, alkalis, and ammonia. Acid anhydrides (acetic anhydride), amides (acetamide) and their hydrolysis. Amines, RNH_2 , R_2NH and R_3N (methylamine, dimethylamine, trimethylamine).

Modifications of group function as illustrated by the following : Difference in the properties dependent on the group OH in alcohols and in acids. Differences exhibited by the group $\text{C} = \text{O}$ in aldehydes and

ketones on the one hand, and in acids, esters, etc., on the other. Differences in the properties of the NH_2 group in amines and amides.

The elementary principles of Physical Chemistry, which will find illustration throughout the subject matter of the syllabus. The following topics should be included among those studied : The properties of gases : The laws of Boyle, Charles, Avogadro, Gay Lussac, and Graham, and the law of partial pressures. Difference of specific heats of gases at constant pressure and at constant volume. Ratio of the specific heats and its connection with atomicity treated empirically. Determination of molecular weights of gases and vapours. Thermal dissociation. The properties of solutions : Distribution law. Henry's law. Osmotic pressure. Proportionality of lowering of vapour pressure, raising of boiling point, and lowering of freezing point to molar concentration. Determination of molecular weights in solution. The essential differences between colloidal and true solutions. Electrolysis and electrolytic dissociation. Chemical equilibrium and simple applications of the law of mass action. Le Chatelier's principle. Solubility product. Simple treatment of the strength of acids and bases, indicators, and the hydrolysis of salts. Effect of concentration, temperature, and catalysts on rate of reaction. Exothermic and endothermic reactions. Hess's law.

II

Practical Examination

Candidates are permitted to bring for use in the practical examination any book or books they desire, including their own laboratory note-books.

Qualitative analysis of simple mixtures of not more than four inorganic radicals. (Phosphate separations will not be required.)

Preparation and use of volumetric solutions of :—acids and alkalis, potassium permanganate, potassium dichromate, sodium thiosulphate, iodine, arsenious oxide, silver nitrate and potassium thiocyanate.

Candidates may also be required to examine the action of heat and reagents on substances supplied and to identify well-known products, including gases, produced in the reactions. The practical exercises may also include the preparation and purification of substances by methods involving solution, precipitation, crystallization, distillation and sublimation.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge ; centrifuge tubes ; water bath with cover pierced to take centrifuge tubes ; two long dropping pipettes ; micro burners ; wash bottles 100 cc. polythene squeezing type ; crucibles 25 mm. and 15 mm. ; spotting tiles (porcelain) and microscope slides ; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in. and block to hold these and centrifuge tubes ; rack for dropping pipettes ; long thin spatula ; Whatman papers (No. 120), 2 in. squares ; small porcelain dish ; forceps and tube holders ; anti-bumping tubes to fit in centrifuge tubes ; small conical flask, 10 ml. ; pyrex tube fitted for testing evolved gases ; reagents ; strong acids in Jena T.K. bottles, other common reagents in bottles fitted with dropping pipettes.

Candidates are required to bring to the practical examination their *original* note-books for inspection by the Examiners, and they may use their laboratory note-books and also any other books or books they wish during the practical examination. All books and note-books must be taken away by the candidates at the end of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Botany

[Two papers and a practical examination.]

Morphology

The structure and properties of the cell. The plant body : its structure, development and modifications. Nuclear and cell division.

Special Morphology, Reproduction and Taxonomy

The general characters of the following groups :—

Bacteria.

Fungi, especially *Mucor*, *Penicillium*, *Saccharomyces*, any common gill-bearing fungus, and a plant pathogen.

Algae, especially *Chlamydomonas*, *Spirogyra*, *Vaucheria* and *Fucus*.

Bryophyta, especially *Pellia*, and *Funaria*, the latter with special reference to its life history, and without detailed treatment of the sporophyte.

Pteridophyta, especially *Dryopteris*, and the special features of *Selaginella*.

Gymnosperms, especially *Pinus*.

Angiosperms, a study of the morphology and biology of the flower, with some training in the use of a flora. Family characters not to be emphasized.

Elements of Physiology

The mineral nutrition and water relations of plants.

Outlines of metabolic changes in the plant, especially respiration and photosynthesis.

Growth.

Geotropism and phototropism.

An elementary knowledge of the soil in relation to the plant.

Elements of genetics and their cytological basis. Evolution.

Practical Examination

The practical work will include the dissection and examination of plants or parts of plants, and the reference to their systematic position of the plants or parts of plants comprised in the foregoing syllabus. Simple experiments in practical physiology may be set.

Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination. Candidates may bring their own stains to the practical examination, but double staining is not required. Candidates will be permitted to provide for themselves and use hand microtomes if they so desire.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Zoology

[One paper and a practical examination.]

The general physical and chemical properties of living matter as exemplified by *Amoeba*. The fundamental functions of living being as illustrated by the life and habits of *Amoeba*.

The structure and habits of *Paramoecium*. Its characteristic "reaction" to stimuli. Nature of the connexion between reaction and stimulus. Conjugation and its relation to reproduction. A brief survey of other types of Ciliata.

Euglena as a type of Flagellata. The presence of chlorophyll and its meaning. The distinction between animal and plant.

Volvox. The distinction between body and reproductive cells.

Hydra as a type of the simplest Metazoon. Its structure and habits—with special emphasis on its reproduction.

Lumbricus as a type of Coelomate animal. Its structure and the outline of its development, to illustrate the meaning of germ layers. Its general histology. Its habits and their relation to horticulture.

Ascaris, its structure, habits and life history. Brief survey of the group of Nematoda in their relation to plant diseases.

The *Cockroach* as a type of Arthropoda and of Insecta. Its external features, special emphasis being laid on the structure of the mouth-parts. Its internal anatomy and habits.

Helix hortensis as a type of Mollusca. Its anatomy and habits. The common allies of *Helix* (*Ario*, *Limax*, etc.) and their depredations. The carnivorous slugs.

The *Frog* as a type of Vertebrate animal. Its external features, internal structure; the function of the principal internal organs. The skeleton of the *Frog*. Outline of its histology. Its life-history.

The smaller vertebrates as aids and hindrances to horticulture. Insect-eating and seed-eating birds. The attacks by insect-eating birds on fruit. Importance of estimating the balance of advantage and disadvantage in each species. The smaller mammals in their relationship to horticulture. The Rodentia as pests—the natural foes of the Rodentia.

The list of plants and animals may be changed from time to time, but two years' notice of any change will always be given.

Practical Examination

The candidate must be prepared to examine microscopically, to dissect, and to describe specimens or parts of the animals comprised in the foregoing syllabus.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

Geology

[One paper and a practical examination.]

Physical character and chemical composition of the common rock-forming minerals. Composition, texture, classification and origin of common rocks. Methods of investigation.

The principal agencies of denudation and deposition, and their work.

Origin of soils and sub-soils, and their relation to rock-types.

The inter-relation of rocks to one another. The structures of rocks and the chief changes which rocks have undergone.

Drainage, and the circulation of underground and surface waters.

The relation of surface relief to the composition and tectonics of the earth crust, and to the agents acting upon it.

Expression of geological data by means of maps and sections.

The principles of stratigraphical geology. The distribution in the British Isles of the principal formations and rock-types, including superficial deposits, with special reference to the soils with which they are associated and the economic products which are of importance for agricultural purposes, building construction, and road-making.

Practical Examination

Description and identification of common rock-forming minerals and of the principal varieties of rocks. The study of the texture and composition of the chief types of rocks under the microscope.

The interpretation of topographical and geological maps by descriptions and the drawing of sections.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Applied Physics

[One paper and a practical examination, with an oral examination on the use of instruments.]

General Properties of Solids, Liquids, and Gases

Force and work as exemplified by levers, pulleys and other simple machines. Water and its chief physical properties. Pressure head and flow of water. Water supply. Storage and distribution. Lift and force pumps, siphons and hydraulic rams.

Relation between pressure and volume in gases. The atmosphere. Use of barometer. Diffusion in liquids and gases. Capillarity. Osmosis.

Heat

Temperature. Thermometers. Expansion of solids, liquids and gases with rise of temperature. Quantity of heat. Specific heat. Latent heat. Vapour pressure. Dew-point. Formation of cloud, rain, hail,

snow, fog, dew and hoarfrost. Use of rain gauge. Conduction. Convection, especially in relation to atmospheric currents. Radiation. Heating systems : principles and simple applications, with special reference to Horticulture.

Optics

Propagation of light. Reflexion and refraction. Photometry. The general laws of radiation :—Visible, ultra-violet, infra-red. Emission and absorption. Heating effects of radiation.

Electricity

The simpler phenomena of electrified bodies. Conduction and insulation. Distribution of electrification on conductors. Simple phenomena of magnetism. Electric current. Primary and secondary batteries. Electric motors. A thermo-electric couple and its use in measuring temperatures.

Practical Examination

The practical examination will consist of practical problems illustrative of the principles set forth in the syllabus for written examination.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Candidates' practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original experimental work carried out in the laboratory. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

B.Sc. (HORTICULTURE) EXAMINATION

The degree will be awarded to candidates who are successful in both parts of the Final Examination.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to Part I or Part II of the examination, each candidate must (a) have been registered as an External Student preparing for the degree of B.Sc. (Hort.), (b) have completed the Intermediate Examination in Horticulture unless referred in one subject thereat, and (c) have obtained approval of candidature for the examination.

2. To be admitted to both Part I and Part II on the same occasion or to Part I or Part II as may be necessary to complete the B.Sc.(Hort.) Examination, each candidate must (a) have been registered as an External Student preparing for the Degree of B.Sc.(Hort.) at least three academic years earlier, (b) have completed the Intermediate Examination in Horticulture at least one academic year previously and (c) have obtained approval of candidature for the examination.

3. A candidate who enters for a referred Intermediate subject on the same occasion with either Part of the Final Examination and fails in the referred subject only will be credited with his success in the Final Part but will not be admitted to the remaining Part until at least one academic year after passing the examination in the referred Intermediate subject.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the second Monday in June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for both Parts of the examination during the period October-November of the year next but one preceding that in which the second Part (or both Parts as the case may be) is to be taken and not later than 7 December of that year. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 7 December, application may be accepted after this date on payment of a late fee of £1 1s. which is not returnable, but no application will be accepted after 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 21 December of the preceding year. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 January, and the candidate list will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

Whole examination (Parts I and II)	..	..	..	£	s.
One Part only	..	..	..	8	8
	..	..	..	4	4

Fees paid between 1 September, 1949, and 1 September, 1952, for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for a Final Examination taken between 1 September, 1952, and 1 September, 1956; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

A candidate may take Part I and Part II on one and the same occasion, or on different occasions, in which case either part may be taken first. If the candidate enters for Parts I and II on the same occasion, and passes in one Part but fails in the other, he shall be credited with having passed in the Part in which he has been successful.

Part I.—Principles of Horticulture

There will be one three-hour written paper and a practical examination not exceeding six hours on each of the Sections I and II, and a three-hour written paper and a practical examination not exceeding three hours on Section III.

Practical Examination on Section II (Chemistry)

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge; centrifuge tubes; water bath with cover pierced to take centrifuge tubes; two long dropping pipettes; micro burners; wash bottles 100 cc. polythene squeezing type; crucibles 25 mm. and 15 mm.; spotting tiles (porcelain) and microscope slides; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in., and block to hold these and centrifuge tubes; rack for dropping pipettes; long thin spatula; Whatman papers (No. 120), 2 in. squares; small porcelain dish; forceps and tube holders; anti-bumping tubes to fit in centrifuge tubes; small conical flask, 10 ml.; pyrex tube fitted for testing evolved gases; reagents; strong acids in Jena T.K. bottles, other common reagents in bottles fitted with dropping pipettes.

At the practical examination on Section II candidates may refer to any book or books they wish, including their own laboratory note-books.

Part II.—Practice of Horticulture

There will be one three-hour written paper on each of the four sections of Part II, and a practical and oral examination extending over not more than two days.

Candidates will be expected to show knowledge of the chief results which have been obtained at horticultural research stations in this country and at the principal foreign stations.

1. The examination shall be conducted in the main by printed papers, but the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

2. No candidate will be permitted to pass unless he satisfies the examiners in the practical part as well as in the written part of the examination, and no amount of excellence in the written examination will be allowed to compensate for deficiency in the practical examinations.

3. Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

4. Candidates are also required to bring to the practical examination in Part II, note-books of practical exercises in Book-keeping and plans and field note-books in Garden Surveying. They will be examined in the use of instruments employed in the garden for surveying and levelling, including : Chain, tape, offset, staff cross-staff, box sextant, straight-edge and spirit level, boring rods, dumpy level.

These note-books must be taken away by the candidate at the close of the examination.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

6. No exemptions from any part of the examination are allowed.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 25 July, the External Registrar shall publish a list of the candidates who have passed, arranged in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the External B.Sc. (Horticulture) Examination who have entered for both parts of the examination, or for one part having already passed in the other part, are eligible to apply for an Aegrotat Degree. In either case the candidate must have completed more than half the examination.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the degree of B.Sc. (Horticulture) under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES

Principles of Horticulture

Section I

The relations of plants to temperature, light, air, water, and the properties of the soil, and their horticultural applications. Physiological conditions under glass. The rest-period in plants and seeds, forcing, retarding ; seed formation, dissemination, germination, seed testing. Outlines of metabolic changes in plants and their practical significance ; the effect of external and internal conditions on growth and reproduction, the processes of ripening and senescence of fruit and of vegetative storage organs, and their relations to practical problems of storage. The special physiology and morphology of horticultural operations, such as methods of vegetative propagation ; transplanting trees and herbaceous plants, pruning, stem ringing, fruit thinning ; the processes of regeneration and the healing of wounds in plants.

Descriptive morphology of plants in general cultivation. Weeds and their effects ; the principal horticultural weeds, their life histories and methods of eradication. Vegetation in relation to habitat, including some study of physiological anatomy ; plants of woodlands, heaths and deserts ; water, bog, alpine and rock plants.

The general scheme of classification of plants with especial reference to seed plants and ferns in general cultivation. The characters, habits and geographical distribution of the principal families of seed plants and ferns of importance in horticulture.

Heredity, nature and causes of variation. Mendelian inheritance and its bearing upon problems of breeding. Selection, methods and their limitations. The physical mechanism of heredity, elements of cytogenetics and its horticultural applications ; sterility, incompatibility. Breeding-problems and results obtained with the more important horticultural crops.

Section II

The chemistry of the more important substances and processes involved in plant life. Elements required for nutrition, their functions and importance in relation to particular horticultural crops. Composition of the more important market garden and fruit crops ; changes during growth, ripening and storage ; effects of environmental and cultural conditions.

Soils.—Their origin in relation to the geological formation, topography, natural drainage, soil profile. The principles of soil classification. The correlation of crop performance with soil characters. Chemical and physical properties of soils, methods of chemical and mechanical analysis, interpretation of results. The microbiology of soils ; changes due to bacteria and other soil organisms ; nitrification, denitrification, nitrogen fixation, humification, partial sterilization, etc. The atmosphere of the soil. The soil water and movement of salts in soils. Soil temperature. Effects of tillage operations. Physico-chemical methods as applied to soils.

Manures.—Theories of manuring and evaluation of manurial trials. Nitrogenous, phosphatic and potassic fertilizers ; their composition, sources, properties, mode of action and relative value for different soils and crops. Farmyard manure, refuse manures, green manures ; their composition, properties, chemical and bacterial changes. Manurial residues. Lime and liming. Methods of analysis and valuation of manures and fertilizers. The adulteration of manures and its detection. Legislation relating to the sale of fertilizers.

Section III

Plant Pathology.—The causes of disease. Effect of environmental conditions ; parasitic and non-parasitic disease. Predisposition, immunity and resistance to disease ; the dissemination of disease. Detailed study of common diseases of important horticultural crops caused by fungi, bacteria, and other agencies. Methods of prevention and remedies. Common virus diseases, their symptoms, vectors and methods of control. The generalized study of the external and internal structure of an insect. Life-history, metamorphosis, structure of immature stages. Characters of the chief orders of Insecta of economic importance. The life-history, habits and injuries caused by the principal insect and other pests of the more important horticultural crops. Mechanical, physical, chemical and biological control. Legislation relating to pest and disease control ; import and export regulations.

Composition, properties and application of the chief insecticides, fungicides and weed killers ; their mode of action. Methods of analysis of materials used and detection of adulteration.

PART II

Practice of Horticulture*Section I*

Introductory and General.—Importance of horticulture in the farming economy of Great Britain. Geographical distribution of home production. Sources and relative importance of imports of horticultural produce. The conception of orderly marketing and recent developments in the marketing of horticultural produce.

Horticultural holdings, their size and management. The processes of cultivation and their results, land clearance and drainage. The selection, use, care and maintenance of machinery and implements, including mechanical tractors. Tillage, seeding and planting implements spraying and dusting plant, packing and grading machines, boilers and heating apparatus. The construction of glasshouses.

Production Costs and Market Returns.—Object of keeping accounts. Horticultural valuations, including the calculation of depreciation on buildings and equipment and of the annual increment of value in young plantations. Records necessary for the preparation of detailed accounts ; labour sheets, use of materials, disposal of crops, etc. General principles of detailed accounting ; apportionment of labour, equipment, overhead and other costs. The method of calculating production costs of field and glasshouse crops. Relative importance of production costs per acre, yield per acre and selling price.

Practical book-keeping, Cash books, Ledgers, Journals and other books of first entry. Trading accounts. Profit and loss accounts. Balance sheets.

Section II

Hardy Fruits.—Sites and soils. Considerations affecting lay-out, preparation of the ground, planting. Propagation and nursing practice, including a study of rootstocks. The cultivation, manuring, pruning, training, thinning, picking and storage of various kinds of fruits. Description and recognition of the more important varieties. Grading, packing and marketing fruit.

Section III

The Flower Garden.—Suitable sites and soils for flower gardens. Design and lay-out of grounds. Propagation, cultivation and treatment of the various kinds of plants required for the rose garden, herbaceous border, flower beds, rock garden and water garden. The planting, pruning and propagation of trees and shrubs. Formation and management of lawns and playing fields. History of gardens.

The Greenhouse and Conservatory.—The management of greenhouses and conservatories. The treatment of stove, propagating, intermediate and cool houses. The growing of suitable flowering and foliage plants for the conservatory and house to maintain a display throughout the year.

Section IV

Market-Gardening.—The culture of vegetables and salads, suitable successions. Intensive systems of production. Production of hardy and half-hardy plants and bulbs for sale. Cultivation of flowers in the open and under glass for the cut-flower market. The cultivation of fruits under glass. Grading, packing and marketing. The heating, ventilation, lighting and management of glass houses and forcing sheds. Site and soil ; water supply ; hygienic conditions ; soil sterilization.

**MASTER OF SCIENCE, DOCTOR OF PHILOSOPHY
AND DOCTOR OF SCIENCE**

Candidates who have obtained the Degree of B.Sc. (Horticulture) will be permitted to proceed to the M.Sc., Ph.D. and D.Sc. Degrees in accordance with the regulations in Science for External Students, which may be obtained on application to the External Registrar.

UNIVERSITY OF LONDON



REGULATIONS

FOR THE

DIPLOMA IN BIOLOGY

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

DIPLOMA IN BIOLOGY

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination, each candidate must (a) have satisfied the minimum University entrance requirements, (b) have been registered as an External Student preparing for the Diploma in Biology and (c) have obtained approval of candidature for the examination.

DATE OF EXAMINATION

The examination shall be held once in each year, beginning on the second Monday after 28 June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the Diploma in Biology during the period September-November of the year preceding the examination and not later than 15 November. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 15 November, application may be accepted after this date on payment of a late fee of £1 1s. which is not returnable, but no application will be accepted after 15 April in the year of the examination.

ENTRY TO EXAMINATION

The candidate list for the examination will be opened on 3 April. Entry forms will not be despatched by post from the University after 8 May, and the candidate list will be closed on 15 May.

Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. No entry can be accepted after the candidate list has been closed.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. The fee is £5 5s. for each entry.
2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1. University of London Account."
3. A candidate who withdraws from the examination after the last date of entry but not later than 15 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

1. Candidates will be examined in *four* subjects as follows :—

- I Botany.
- II Zoology.
- III General and Animal Physiology.
- IV General Biology.

2. There will be one three-hour written paper and a practical examination of three hours in each subject.

3. All answers to examination questions shall be written in English unless instructions are given to the contrary.

4. No exemption is granted from any part of this examination.
5. Candidates are required to bring to the practical examination their *original* laboratory note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination. Candidates may bring their own stains to the practical examination, but double staining is not desired. Candidates will be permitted to provide for themselves and to use hand microtomes, if they so desire.
6. Practical note-books must contain a certificate by their teachers, if any, that the work is the candidates' original work carried out in the laboratory from specimens. Candidates not in attendance at a teaching institution are required to include in their note-books a statement as to how they carried out their practical work.

TIME TABLE

The examination will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

On 20 August the External Registrar shall publish a list of the candidates who have passed, arranged in alphabetical order.

A mark of distinction will be placed against the names of those candidates who show exceptional merit.

A copy of the Pass List will be sent to each successful candidate, and an individual communication to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists will be laid before the Senate for approval in October.
2. A diploma, under the seal of the University, shall be delivered to each successful candidate.

SYLLABUSES

I Botany

1. A general study of the external and internal morphology of plants, especially of flowering plants. The relations between structure and function and between structure and environment. Cell structure and cell division (see also section IV). The general organization of the plant; meristems, primary and secondary tissues; common variations on the general structural scheme.
2. A general introduction to plant physiology, including respiration, photosynthesis; transpiration; the formation, storage and utilization of food; growth and movement. An elementary survey of the physical and chemical properties of water, gases, solutions, colloids and enzymes; as these affect the life of the plant.
3. The general lines of progression in the vegetable kingdom, especially as illustrated by the following plants:—*Chlamydomonas**, *Eudorina*, *Volvox*, *Spirogyra**, *Oedogonium**, *Vaucheria**, *Fucus**, *Pythium**, *Mucor**, *Eurotium**, *Psalliota**, *Pellia**, *Funaria**, *Dryopteris**, *Lycopodium*, *Selaginella*, *Cycas*, *Pinus**, *Taxus*, and any common monocotyledon* and dicotyledon*.
4. Evolution, Genetics (for Ecology of plants see also section IV).

5. Practical work will include the examination, preparation and drawing of plants and parts of plants named in the foregoing syllabus, and the carrying out and interpretation of simple experiments in plant physiology.

II Zoology

6. A study of the functional morphology of the rabbit.

7. A general study of the comparative anatomy of the chief phyla of the animal kingdom, as exemplified by the following types, together with a consideration of the functions of their various organs :—

PROTOZOA : *Amoeba**, *Euglena**, *Trypanosoma*, *Paramecium**,
Vorticella, *Opalina*, *Monocystis**, *Plasmodium*.

PORIFERA : *Sycon* (*Grantia*).

COELENTERATA : *Hydra**, *Obelia**, *Aurelia*, an actinian.

PLATYHELMIA : a planarian, a fluke, a tape-worm.

ANNELIDA : *Nereis*, an earthworm.

NEMATODA : a round worm.

ECHINODERMATA : *Asterias*.

MOLLUSCA : *Helix**, *Anodonta*.

ARTHROPODA : *Daphnia*, crayfish*, cockroach*, a butterfly, a spider.

CHORDATA : a simple ascidian, amphioxus*, dog-fish*, frog*, lizard, pigeon, rabbit*.

8. The principles of classification and nomenclature. A discussion of the systematic position of the animals mentioned in paragraph 7, and of their place in their respective phyla and of these phyla in the animal kingdom.

9. The modification of structure, habit and life-history associated with parasitism, including the mode of transmission from host to host, as illustrated by the parasites mentioned in paragraph 7.

10. The structure of the animal cell. Cell division (see also section IV). The multi-cellular organisms illustrating morphological differentiation and the division of labour. The characteristics of the principal vertebrate tissues.

11. Sexual and asexual reproduction. The evolution of sex. Hermaphroditism, parthenogenesis and sexual dimorphism. The chief types of ova. Gametogenesis. Fertilization and cleavage. The germ layers and their formation in amphioxus, frog and chick. The development and metamorphosis of the frog. The development of the chick up to the third day of incubation. The development and functions of the foetal membranes of the chick and mammal. An elementary knowledge of the chief larvae of invertebrates.

12. Evolution, genetics and ecology of animals (see also section IV).

13. Practical work will include the examination, preparation and drawing of animals or parts of animals named in the foregoing syllabus, and a study of whole mounts or of dissections and skeletons of the prescribed types. A practical acquaintance with the chief embryological stages is essential.

[Note.—The animals and plants marked with a * in paragraphs 3 and 7 are to be studied in detail ; this detailed study is to be supplemented and extended by reference to organisms belonging to the same groups, and exhibiting features of special interest.]

III General and Animal Physiology

14. The elements of physics and chemistry in their biological aspects, as relating to plants and animals :—

(a) Properties of water ; its biological significance ; properties of solutions ; electrolytic dissociation ; the action of ions ; dialysis ; osmosis ; “ buffer ” solutions and the preservation of the neutrality of the organism.

(b) The colloidal state and its biological significance ; surface tension ; adsorption.

(c) Enzyme action.

(d) The properties of cell membranes.

(e) Elementary chemistry of proteins, carbohydrates and fats, their origin, fate and significance in living matter.

15. An elementary knowledge of animal physiology (chiefly mammalian) along the following lines :—

(a) Chief constituents of blood and their functions.

(b) General arrangement of circulatory system in mammal ; the heart and blood vessels and their control.

(c) Processes of respiration ; factors influencing gaseous interchange.

(d) Secretion, digestion and absorption.

(e) Principles of nutrition and metabolism.

(f) Properties of muscle and muscular activity.

(g) Excretion ; formation and composition of urine.

(h) Reproduction.

(i) Chemical co-ordination and internal secretion.

(j) Nervous co-ordination ; general arrangement of the nervous system ; brief survey of the functions of its different parts ; reflex action.

(k) Structure of eye and accommodation.

16. Practical course :—

(i) Elementary experiments illustrating the phenomena and laws dealt with in theoretical course under heading 14 (a-e).

(ii) Factors influencing the heart beat (mammal and frog), e.g., temperature ions, electrical stimulation, exercise ; experiments on blood pressure of man.

(iii) Factors influencing pulmonary ventilation in man ; oxygen capacity and haemoglobin content of blood ; spectroscopic examination of haemoglobin and its derivatives ; haemin crystals.

(iv) Experiments on chemical properties, identification and digestion of the foodstuffs : factors influencing enzyme action.

(v) The properties of skeletal muscle.

(vi) Detection of chief constituents of urine ; estimation of urea.

(vii) Experiments on the field of vision, “ blind ” spot, and accommodation of the eye.

(viii) The fixing, staining and mounting of fresh tissues ; staining and mounting of paraffin sections ; the examination of the chief tissues and organs of the vertebrate body.

IV General Biology

17. *The evidence for organic evolution.* The evidence for organic evolution as obtained by a study of morphology, embryology, palaeontology (this should be illustrated mainly by reference to animals), and geographical distribution.

18. *The mechanism of evolution.* (a) Variation and heredity, including an elementary treatment of the genetics of both plants and animals, and of nuclear cytology, including some knowledge of linkage and crossing-over ; variation in nature and in domestic animals and cultivated plants. (b) Theories of evolution ; Lamarck and Lamarckism ; Orthogenesis ; Darwin ; natural selection and sexual selection. The modern position.

19. *Adaptation and Ecology.* (a) Chief habitats. (b) Adaptation of animals to habitat and mode of life :—

- (i) Free living animals ; sessile, parasitic, symbiotic and commensal.
- (ii) Aquatic life ; benthos, nekton and plankton.
- (iii) Locomotion in animals ; swimming, crawling, burrowing, walking, running, jumping, flying.
- (iv) Feeding ; ciliary and macro-feeders ; herbivores, carnivores, and scavengers.

(v) Colour ; protective, warning, mimetic, sexual, non-adaptive.

(c) Adaptation of plants to habitat and mode of life :—

- (i) Elementary survey of the physics and chemistry of soil.
- (ii) Structure and habitat ; hydrophytes, mesophytes, xerophytes, saprophytes ; climbers, carnivorous plants and parasites.

(d) Ecology :—

- (i) The nature of the community.
- (ii) The more important communities—woodland, heathland, dune, aquatic, and those occurring on calcareous and peaty soils, and on cultivated ground.
- (iii) Colonization, succession, dispersal, migration, competition.
- (iv) The inter-relation of animals and plants, especially of insects and flowering plants ; food chains ; outline of the nitrogen and carbon cycles.

20. Practical work in general biology will include the study of animals and plants in the field, and the investigation and recognition of special structural features relevant to the subject matter of the syllabus.

UNIVERSITY OF LONDON



REGULATIONS

FOR DEGREES

IN

ENGINEERING

for External Students

Regulations for the B.Sc. (Eng.) Examinations in Chemical Engineering, in Mining and in Metallurgy, are contained in separate pamphlets.

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a "Blue Slip" which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations, which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

B.Sc. (ENGINEERING) EXAMINATION**INTRODUCTORY NOTE**

1. Candidates for the Degree of Bachelor of Science (Engineering) as External Students are required to satisfy the minimum University and Faculty entrance requirements, to have been registered as External Students for the B.Sc. (Eng.) Examination, to have obtained the necessary qualifications for admission to the Final Examination Parts I and II, and to pass these two examinations.

2. The standard of the examination in Part I is that which would normally be required of a whole-time student after a course extending over five terms subsequent to completing the Intermediate Examination in Science or one of the accepted alternatives. The standard of the examination in Part II is that which would normally be required of a whole-time student after a course extending over four terms subsequent to completing the Part I examination.

3. Candidates who have obtained the B.Sc. (Engineering) Degree, whether Pass or Honours, or in Mining, or in Metallurgy, or in Chemical Engineering, are not permitted under any circumstances to re-enter for the examination in the same branch, but may enter for the examination in another branch.

FACULTY REQUIREMENTS

A candidate who has satisfied the minimum University entrance requirements by means of a General Certificate of Education on and after 1 May 1951, will be required to have passed in Mathematics at Ordinary or Advanced Level in the examination for the General Certificate of Education or an accepted equivalent.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to Part I of the Examination, each candidate must :—

(a) have satisfied the minimum University and Faculty entrance requirements and have been registered as an External Student preparing for the Degree of B.Sc. (Engineering) ;

(b) have passed, at an examination or examinations approved by the University in *either* (i) the *three* subjects

Mathematics (Pure and Applied), Physics, Chemistry,
or (ii) the *four* subjects

Pure Mathematics, Applied Mathematics, Physics, Chemistry.

2. For candidates qualifying in the *three* subjects the examination and standards approved are :—

(i) the Intermediate Examination in Science of this University ;

(ii) Main subject standard of a Higher School Certificate recognized by the Ministry of Education, provided that, with the single exception mentioned below, a Higher School Certificate has been awarded ;

A candidate who has not qualified for the award of a Higher School Certificate but who has been permitted to count successes gained in 1949 or 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum entrance requirements of the University will be permitted to count either or both subjects towards the qualification for admission under these regulations.

(iii) Advanced Level in the General Certificate of Education Examinations.

3. For candidates qualifying in *four* subjects the examinations and standards approved are :—

for Pure Mathematics, Applied Mathematics and Physics,
as in para. 2 above,
for Chemistry,

as in para. 2 above with the addition of the following :—

(iv) Subsidiary Subject standard of a Higher School Certificate ;
(v) A School Certificate recognized by the Ministry of Education with a " credit " in Chemistry ;

(vi) A pass in the Matriculation Examination of the University of London (in or before June 1951) with Chemistry as one of the subjects ;

(vii) A pass in the Special Entrance Examination of the University of London (in or before May 1951) with Chemistry as one of the subjects ;

(viii) A pass at Ordinary Level in a General Certificate of Education Examination conducted by one of the approved University Examining Bodies.

with the exception that a candidate who holds a Higher School Certificate or Certificates recognized by the Ministry of Education with passes at main subject standard in three of the four subjects and a pass at subsidiary standard in the fourth will also be accepted.

4. Candidates who have qualified in three of the *four* subjects Pure Mathematics, Applied Mathematics, Physics, Chemistry, may apply for approval of candidature for Part I, but they will not be admitted to the examination until they have qualified in the remaining subject.

5. Candidates who have obtained one of the following qualifications will also be admitted :—

(i) the Intermediate Examination in Engineering of this University (in or before June 1949) including also those who were referred in the subject Engineering Drawing ;

(ii) the Engineering Cadetship *Diploma* of the Ministry of Education.

6. Every candidate must have obtained approval of candidature for the examination and his application must be endorsed by the authorities of an Institution recognized for the purpose by the University to the effect that he is following the prescribed course of study at that Institution, except as provided for in para. 8 below.

7. To be admitted to Part II of the examination, each candidate must :—

(a) have been registered as an External Student at least three academic years previously ;

(b) have passed Part I unless referred thereat or have obtained permission (granted only in exceptional circumstances) to enter for it in the same year as he enters for Part II ;

(c) have attended a prescribed course of study at an Institution recognized for the purpose by the University (except as provided for in para. 8 below) ;

(d) have obtained approval of candidature for the examination.

8. A candidate who is not in attendance at a recognized Institution may apply for admission to the examination if he produces evidence satisfactory to the Council for External Students that his previous training and/or practical experience has been adequate. Such candidates must *either*

(a) be at least 25 years of age and have had at least 5 years' satisfactory practical engineering experience (excluding apprenticeship or similar training period) ; *or*

(b) have passed approved examinations required for a degree in engineering in another University in the British Commonwealth and approved by the Council for External Students, or hold a corresponding approved qualification granted in a foreign country.

Each application for admission to the examination under this regulation must be made on the appropriate form and must be accompanied by a fee of £1 1s. which is in no case returnable. The applicant may be required to submit records of laboratory and drawing office work which he has carried out before his application is accepted (see also page 1857, para. 10).

9. A concession granted under paragraph 8 above will be valid for four years but application may be made by the candidate for its renewal.

10. Candidates in attendance at a recognized Institution for other subjects are not debarred from pursuing for either part of the examination a course in Mathematics by private study or by other means, in lieu of attendance for such a course at a recognized Institution.

DATE OF EXAMINATION

The examination shall take place once in each year, Part I beginning on the third Monday in March and Part II on the first Monday after 28 June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for Part I of the B.Sc. (Eng.) Examination during the period September-December of the year next but one preceding the examination, i.e. in the case of a full-time student, at the beginning of the five-term course, and not later than 30 January of the preceding year. Candidates for Part II should normally apply as soon as they have passed Part I, and not later than 30 May of the year preceding the intended Part II Examination. Provided that the Council for External Students are satisfied as to the reasons for failure to observe these instructions late applications may be accepted on payment of a Late Fee of £1 1s. which is not returnable, but no application in respect of the Part I examination will be accepted after 15 December of the year preceding the examination or Part II after 20 February in the year of the examination.

ENTRY TO EXAMINATION

The candidate list for Part I will be opened on 4 December. Entry forms will not be despatched by post from the University after 8 January, and the candidate list will be closed on 15 January.

The candidate list for Part II will be opened on 8 February. Entry forms will not be despatched by post from the University after 13 March and the candidate list will be closed on 20 March.

Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Part I	6	6
Part II	6	6
Re-examination in referred subject at Part I ..	2	2
Supplementary subject	2	2

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. Candidates taking the oral-practical examination will be required to pay an additional fee of £3 3s. for Part I and £4 4s. for Part II of the Examination.

3. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

4. A candidate who withdraws from the examination after the last date of entry but not later than 15 February in the case of Part I and 1 June in the case of Part II may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix).

SCHEME OF EXAMINATION

1. The examination comprises (a) a written examination, and (b) the examination of the candidate's course work.

2. Each candidate, unless claiming exemption in Engineering Drawing (see under EXEMPTIONS, p. 1857) must pass in the seven subjects of Part I. Equal weight will be attached to each of the seven subjects.

3. In Part II each candidate must pass in at least four subjects and the marks obtained in the two Parts will be combined for the purpose of the classification of Honours. Candidates may, however, offer five subjects at Part II if they so desire, in which case only the four subjects in which the highest marks are obtained will be taken into account.

4. A candidate attending a recognized Institution must have his choice of subjects for Part II approved by the authorities of that Institution. A candidate not in attendance at a recognized Institution must have his choice of subjects for Part II approved by the Council for External Students. The subjects are as follows :—

Part I

(1) Strength and Elasticity of Materials and Theory of Structure	.. .. .	One 3-hour paper
(2) Theory of Machines	.. .. .	One " "
(3) Applied Heat	.. .. .	One " "
(4) Applied Electricity	.. .. .	One 3-hour paper
(5) Mathematics	.. .. .	Two " papers
(6) Mechanics of Fluids	.. .. .	One " paper
(7) Engineering Drawing	.. .. .	One 4-hour paper

Part II

Four or five of the following :—

- (8) **Applied Thermodynamics**—One general paper of 3 hours and one 3-hour paper in *either* (a) **Steam** or (b) **Internal Combustion Engines**.

Candidates must state when applying for approval of candidature which option they select.

- (9) **Principles and Design of Electrical Machines**—Two 3-hour papers.
- (10) **Electrical Power**—Two 3-hour papers.
- (11) **Electrical Measurements and Measuring Instruments**—Two 3-hour papers.
- (12) **Telecommunications**—Two 3-hour papers.
- (13) **Theory of Machines**—Two 3-hour papers.
- (14) **Theory of Structures** (*in* 1954)—One general paper of 3-hours and one 3-hour paper in *either* (a) **Civil Engineering Structures** or (b) **Aircraft Structures**.
(*in and after* 1954) *either* (a) **Civil Engineering Structures**—Two 3-hour papers or (b) **Aircraft Structures**—Two 3-hour papers.

Candidates must state when applying for approval of candidature which option they select and, in 1954, which syllabus they select.

- (15) **Strength and Elasticity of Materials**—One general paper of 3 hours and one 3-hour paper in *either* (a) **Materials** or (b) **Engineering Metallurgy**.

Candidates must state when applying for approval of candidature which option they select.

- (16) **Mathematics**—Two 3-hour papers.
- (17) (*in* 1954) **Mechanics of Fluids**—*either* (a) **Hydraulics**—Two 3-hour papers or (b) **Aerodynamics**—Two 3-hour papers.
(*in and after* 1954) *either* (a) **Mechanics of Fluids**—Two 3-hour papers or (b) **Aerodynamics**—Two 3-hour papers.

Candidates must state when applying for approval of candidature which option they select and, in 1954, which syllabus they select.

- (18) **Surveying**—Two 3-hour papers.
- (19) **Electronics**—Two 3-hour papers.
- (20) (*in and after* 1954) **Mechanics of Flight**—Two 3-hour papers.

5. Candidates offering Civil Engineering Structures or Aircraft Structures are advised to offer also Strength and Elasticity of Materials.

6. The standard of the examination in Part I is to be that which would normally be required of a whole-time student in a course extending over 5 terms subsequent to passing the Intermediate Examination.

7. No candidate shall pass unless he obtains such proportion of the aggregate marks in all subjects, and also such proportion (but lower) of the total marks in each of such subjects taken separately as shall satisfy the examiners. The marks obtained in Part I will be combined with those obtained in Part II for the purpose of the classification of Honours.

8. In each subject a reasonable choice of questions shall be allowed.

9. All answers to examination questions shall be written in English unless instructions are given to the contrary.

10. A candidate who has not attended a recognized Institution but has been registered under clause 8 of the "Qualifications for Admission" will be required (a) if registered under clause 8 (a) to submit in writing details of engineering experience and/or details of course work performed in the different subjects at an educational institution or if registered under clause 8 (b) to produce records of laboratory and drawing office work performed in the different subjects at the University or College where he obtained the degree or approved qualification; (b) to attend an oral-practical examination in London appropriate to that Part or those Parts of the examination for which he is entered, of not more than six hours duration comprising (i) an oral examination or (ii) tests in an engineering laboratory or (iii) both, at the discretion of the examiners; and (c) to pay an additional fee of £3 3s. for Part I and £4 4s. for Part II of the examination.

Permission to attend an oral-practical examination will be granted, in the first instance, for Part I only; a further application to attend for Part II must be made after the candidate has passed Part I unless permission to enter for Parts I and II together is granted, which will only be in exceptional circumstances.

EXEMPTIONS

Note.—No exemptions are given from this examination in whole or in part except on the results of examinations of this University as follows :—

Candidates who have passed the Intermediate Examination in Engineering under the old regulations (with Engineering Drawing) and candidates who have passed in Engineering Drawing at Part I of the General Internal or Special Internal B.Sc. (Eng.) Examination will be exempt from examination in Engineering Drawing at Part I.

REFERENCE

1. A candidate at Part I who fails to reach the minimum standard in any one subject only may be "referred," i.e., he may be permitted on the recommendation of the examiners to re-present himself in that subject alone.

2. A candidate who fails to pass in the referred subject will be permitted to re-enter for examination in that subject alone on any subsequent occasion. A candidate who enters for and is successful at Part II before he has passed in his referred subject at Part I will be credited with Part II and allowed to complete the Degree Examination by passing in the referred subject alone.

3. The examiners will recommend that the candidate be referred only if his failure in the subject is not serious, and if his performance in the remaining subjects is reasonably good.

COURSE WORK AND PRACTICAL WORK

1. Except in the case of a candidate who is permitted to take the oral-practical examination, course work in all subjects except Mathematics is an essential part of the examination, and a candidate cannot pass unless his course work satisfies the examiners. The examiners shall be at liberty to test any candidate by means of oral questions.

2. The course work submitted in any subject must be carried out at a duly recognized Institution and be certified by the candidate's teacher or teachers in that subject.

3. Each candidate will be required to submit his course work for inspection on each and every occasion on which he presents himself for examination, and on each occasion only such course work as is submitted will be considered by the examiners. Nevertheless a candidate who fails in the examination as a whole but who has satisfied the examiners in course work in any subject shall be credited with that course work and exempted from further examination in course work in that subject at any subsequent Final Examination.

Credit for a Pass in course work under the Old Regulations will not be valid for a subsequent entry under the Revised Regulations and candidates who so enter must normally re-submit all their previous work together with any additional work they have done in order to meet the new requirements. Nevertheless when course work passed under Old Regulations has been lost or destroyed the candidate may submit in its place an index-summary thereof, duly certified by the authorities of the Institution at which it was completed. This concession does not apply to any subject in which the candidate failed in course work.

4. A candidate who has satisfied the examiners in course work in all the subjects he offered at Parts I and II of a Special Internal B.Sc. (Eng.) Examination will be credited with course work at Part I of the External B.Sc. (Eng.) Examination and if he has also satisfied the examiners in course work at Part III of a Special Internal examination he may be credited with course work at Part II of the External examination, provided he is offering a similar combination of subjects.

5. If a candidate retires or is absent from the written examination, any course work which has been sent in on his behalf by his Institution will be examined, and he may be credited as having satisfied the examiners in course work as though he had taken the whole of the written examination. Credit for a pass in course work under the Old Regulations will not be valid for a candidate re-entering under the New Regulations.

6. Special importance will be attached to technical facility in drawing, designing, field work, or other practical operations which cannot be tested in an examination by questions. Tutorial or Class Exercises are *not* considered as constituting course work.

7. A candidate whose course work in any subject is rejected by the examiners shall be notified that he has failed in course work and has in consequence failed in that subject.

8. Candidates who have been permitted by the Council for External Students to enter without attendance at a recognized Institution will be required to make a declaration that any practical work they submit is their own work.

9. An Institution has discretion to submit as part of a candidate's ordinary course-work in any subject, cognate work done elsewhere in training for, or in the practice of, the Engineering profession. Such work must be certified both by the Institution and by the authority under whom it was carried out as being the candidate's own original work, and the course-work as a whole must conform to the University's schedule of requirements for that particular subject.

10. An Institution may apply on behalf of any of its students at the time of application for approval of candidature for exemption from course work in any subject on the ground of exceptional professional experience and ability.

11. No definite number of hours of course work is prescribed but the amount of course work must be equivalent to that done during a normal three year full-time course of post-Intermediate study.

12. Specimen schedules of course work will be sent to recognized Institutions for the guidance of teachers.

EXAMINATION OF COURSE WORK AND PRACTICAL WORK

Instructions to Candidates

1. Each candidate for the B.Sc. (Eng.) Degree is required to hand his course work to the authorities of the Institution he is attending by a date of which he will be informed by the Institution but which will be about one month prior to the commencement of the relevant Part of the examination.

2. Course work, other than drawings, should be submitted in loose-leaf files or bound notebooks, *a separate file or notebook being used for each subject*, and where a subject is common to both parts of the examination, a separate file or notebook *must* be used for the work submitted in each part.

3. Each loose-leaf file or notebook, and each sheet of drawings, must bear the name of the candidate, and the full title of the subject. It must be paginated, and provided with an index. Each separate item of course work must bear the date at which it was completed. All drawings must be kept flat.

4. Course work will be returned to Institutions immediately after the examination, and any enquiries regarding the return of the course work must be made to the Institution.

5. A candidate who has been permitted by the Council for External Students to enter without attendance at a recognized Institution will be notified when to submit details of engineering experience and/or laboratory and drawing office work.

Instructions to Institutions

6. The authorities of each Institution must collect the course work from the candidates, see that each piece of course work bears the name and number of the candidate, and is stamped with an official stamp as a certification that the course work has been carried out at that Institution and by that candidate.

7. The candidates' work should be tied in bundles, each bundle consisting of a separate subject and the work arranged in order of the candidates' numbers. Drawings must be kept flat and the drawings of each candidate must be fastened together for each subject. Envelopes should not be used.

8. The whole of the course work, unless very bulky, should be sent in one container to the University by the prescribed date, of which each Institution will be informed, but which will be approximately a fortnight before the commencement of the written examination.

9. With each container of course work must be sent a detailed list of contents and under separate cover, for the whole, the Institution's estimate of the value of the course work of each candidate in each subject on a percentage basis. This estimate must be confidential to the Institution concerned and to the University. An estimate of any course work represented by an index-summary (see page 1858, para. 3 above) must also be included.

10. The course work will be returned to the Institution immediately after the examination.

SUPPLEMENTARY SUBJECTS

Candidates who have passed the B.Sc. (Engineering) Examination may enter for examination in one or more supplementary subjects. Candidates who have passed the B.Sc. (Engineering) Examination with Mechanics of Fluids may offer the alternative section as a separate supplementary subject.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 1 May the External Registrar shall publish for the Part I examination a list of the candidates who have passed, arranged in alphabetical order, and on 21 August for the Part II examination (a) a list of the candidates who have passed ; (b) a list of the candidates who have obtained Honours, arranged by the examiners in two classes, and in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate, and an individual notification will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final B.Sc. (Engineering) Examination (Part II) may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the B.Sc. (Eng.) Examination for External Students, who have already passed Part I and who have completed more than half of the Part II Examination are eligible to apply for an Aegrotat Degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the Examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the Examination as he has attended, he reached a standard which, if also reached in the remainder of the Examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.Sc. (Engineering) under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES**PART I****(1) Strength and Elasticity of Materials and Theory of Structures***Strength and Elasticity of Materials*

The crystallinity of metals. Physico-chemical changes occurring during and after solidification. Undercooling. Cooling curves. Thermal analysis. Construction of simple thermal equilibrium diagrams. An introductory study of deformation processes as applied to metals and alloys. The composition and uses of common ferrous and non-ferrous metals and alloys.

Stress and strain : tension, compression and shear. Complementary shear stress. Hooke's law. Young's modulus. Modulus of rigidity. Poisson's ratio. Temperature stresses. Simple cases of resilience and suddenly applied loads. Composite bars. Elastic and plastic behaviour of common materials in tensile and compressive tests. Stress-strain curves. Simple testing machines. The measurement of strain.

Bending moments and shearing forces in cantilevers and simply supported beams under static loads. Theory of bending beams, including neutral axis, distribution of normal stress due to bending, moment of resistance. Second moment of area of sections. Curvature, slope and deflection of cantilevers and simply-supported beams. Composite beams. Determination of Young's modulus from bending tests. Eccentric loading, including tension or compression combined with bending.

Torsion of circular shafts, including moment of resistance, angle of twist, shear stress. Transmission of power by shafts. Determination of Modulus of Rigidity. Stresses and deflections of close-coiled helical springs made from rods of circular section.

Simple strut theory. Critical loads for slender struts. Empirical strut formulae. Thin cylinders under internal pressure. Stresses in thin rotating cylinders.

Theory of Structures

Statistically-determinate plane frames, including criteria for sufficiency of bracing, stress analysis by graphical and analytical methods. Forces in a tripod. Influence lines of bending moment and shearing force for simply supported beams. Simple cases of rolling loads on girders and trusses with parallel booms. Counter-bracing of framed girders. Unstiffened suspension cables. 3-pinned arches.

Simple cases of deflection of frames treated analytically and graphically. Stability of trapezoidal dams under water pressure on one face and of chimneys under wind pressure.

(2) Theory of Machines

Plane kinematics of simple mechanisms. Constraints and degrees of freedom. Instantaneous centres of rotation. Vector diagrams of displacement and velocity. Graphs of displacement, velocity and acceleration for linear and angular motion. Screws and screw threads. Belt, rope and chain gearing. Simple forms of teeth for spur gears. Wheel trains, including epicyclic trains. Cams. Simple slide-valve motion.

The calculation and experimental determination of centres of gravity and moments of inertia, in two dimensions only. Dynamics of machines. Calculation of piston displacement, velocity and acceleration in the reciprocating-engine mechanism and inertia force in a single-cylinder

engine. Turning-moment diagrams. Flywheels. Simple types of governors. Balancing of rotating masses and primary balancing of reciprocating masses. Simple application of impulsive forces and torques. Friction of unlubricated surfaces. Efficiency of machines. Brakes, clutches and dynamometers.

(3) Applied Heat

Quantities of heat will normally be expressed in British Thermal Units, but examiners will not be precluded from setting questions involving the metric system. The University will provide the following tables at the examination: Abridged Callendar Steam Tables—Fahrenheit Units (fourth edition, Edward Arnold & Co.).

Laws of thermodynamics. The perfect gas. Expansion and compression of gases with constant specific heats. Internal energy and Joule's law. Reversibility. The Carnot cycle. Entropy. Properties of liquids and vapours. Use of steam tables. Internal energy. Isentropic processes. Simple entropy diagrams for gases and vapours. Fuels: gross and net calorific values. Combustion: air required.

An elementary knowledge of steam engine installations, including boilers and auxiliary plant. Indicators and indicator diagrams. Diagram factor. Determination of cylinder dimensions. The Rankine cycle: efficiency-ratio. The behaviour of steam in the cylinder. Compounding.

Internal-combustion engine cycles. Air standard efficiency of constant-volume and constant-pressure cycles. An elementary knowledge of gas, petrol and oil engines, with their indicator diagrams. Elementary treatment of air compressors and meters.

Testing of engines: efficiencies, heat balances.

(4) Applied Electricity

Units and Definitions

The Electric Circuit

Resistivity, temperature, coefficient, heating of conductors. Kirchhoff's laws, simple d.c. network problems. Self and mutual inductance. Effects of inductance in d.c. circuits. Capacitance and its effects in d.c. circuits. Alternating currents and the a.c. circuit, vectorial representation, complex quantities.

Locus diagrams for series and parallel circuits (with one variable quantity). Resonance in simple series and parallel circuits. Power and power factor. The measurement of current, voltage, power and energy in d.c. and a.c. circuits: typical indicating instruments.

Voltage and current relations in balanced three-phase circuits.

Power and energy measurements in balanced three-phase circuits.

D.c. and a.c. systems of supply.

Electrostatics

Delineation of electric fields. Equipotential surfaces. Calculation of the capacitance of parallel plates and coaxial cylinders. Permittivity, electric stress, stored energy.

Electromagnetism

Delineation of magnetic fields due to currents in conductors and coils.

Definitions of magnetic quantities.

Long, straight and circular solenoids. Flux measurement.

The magnetic properties of ferromagnetic materials: simple methods of testing.

Hysteresis and eddy current losses. Permanent magnets.

The magnetic circuit. Stored energy : tractive force.

Transformers

The magnetic circuit, main and leakage paths. Transformation ratios, vector diagrams. Voltage regulation, losses, conditions for maximum efficiency.

D.C. Machines

Simple lap and wave windings. E.M.F. and torque equations.

The magnetic circuit. Simple treatment of armature reaction and commutation. Commutating poles.

Characteristics as generators and motors.

Voltage and speed regulation. Starting : motor starters.

A.C. Machines

Magnetic circuit. Flux distribution in salient pole and non-salient pole field systems.

E.M.F. in single conductors ; resultant e.m.f. in a coil and in a distributed winding due to a sinusoidal flux distribution.

The characteristics of alternators.

The alternator as a synchronous motor.

The polyphase induction motor : simple theory, characteristics, starting.

Electrochemistry

Secondary batteries, simple theory of action, efficiencies.

Electronics

Electron emission : gas discharge phenomena : the open arc.

The diode, characteristics and use as a rectifier.

The triode, characteristics and use as an amplifier.

Simple principles of the photo-electric cell and cathode-ray tube.

Simple principles of action of the mercury arc and the metal rectifier.

Illumination

Definitions and units. Simple calculations of illumination from a given source. Filament and gas-discharge types of electric lamps.

Simple photometric measurements.

(Note.—It is the intention of the University gradually to introduce the rationalized M.K.S. system of units for calculations in Electrical Engineering).

(5) Mathematics

Differentiation and integration of algebraic, trigonometric, exponential, logarithmic and hyperbolic functions.

Maxima and minima of functions of a single independent variable.

Tangents, normals and curvature of plane curves ; geometrical properties of well-known curves.

Technique of integration, including change of variable, use of identities and partial fractions, and integration by parts.

Definite integrals, including applications to arcs, areas, volumes, first and second moments ; graphical and numerical methods of approximate integration.

Approximate solution of equations by graphical and numerical methods.

Complex numbers and Demoivre's theorem.

Taylor's and Maclaurin's series, and other methods of expansion ; use of series for approximation.

Elements of partial differentiation.

First order differential equations with separable variables ; second order linear differential equations with constant coefficients.

Elementary ideas of probability and statistics and application to the theory of errors.

Applications of the foregoing to :—plane statics ; hydrostatics ; dynamics of a particle in one or two dimensions under variable forces ; resisted motion and damped oscillations ; work, energy, momentum ; motion of a rigid body about a fixed axis.

(6) Mechanics of Fluids

Fundamental properties of a fluid. Viscosity. Surface tension. Hydrostatic pressure. Centre of pressure. Floating and immersed bodies. Statical stability. Metacentric height. Hydrostatic equation for compressible fluids. Vertical stability of the atmosphere. Bernoulli's theorem for incompressible flow. Introduction to the stream function. Plotting of streamlines. Measurement of velocity of incompressible flow by Pitot and static pressure tubes, nozzles, orifices, notches and Venturi meter. Resistance of immersed bodies at constant velocity. Rayleigh's formula. Reynold's number. Froude number. Critical velocities for flow in pipes. Formulae with constant coefficients for pipes. Loss of head due to bends, sudden enlargements and contractions. Hydraulic gradient. Simple theory of flow in open channels. Impact and reaction of jets. General principles of the theory of reciprocating pumps, turbines and centrifugal pumps.

(7) Engineering Drawing

The principles of engineering drawing and sketching as applied to engineering details and machine parts. It is recommended that drawings should be in accordance with the British Standard for Drawing Office Practice (308—Amended 1948,) sections 6, 7, 8a, 9, 10, 11, 12, 15.

A knowledge of engineering fastenings, couplings, pulleys, bearings, simple valves, pipe fittings and other simple engineering components, with some reference to the materials used in their construction.

Construction of conics, loci, cycloidal and involute curves. Geometry solids, projection of lines and solids, projection on inclined and oblique planes, auxiliary views. Intersections and developments. Helices. Isometric projection.

PART II

(8) Applied Thermodynamics

Quantities of heat will normally be expressed in British Thermal Units, but examiners will not be precluded from setting questions involving knowledge of the metric system. The University will provide the following tables and charts at the examination :—Abridged Callendar Steam Tables—Fahrenheit Units (fourth edition, Edward Arnold & Co.). Total Heat-Entropy Chart for Steam (Edward Arnold & Co.).

Candidates will be required to offer Section I and either Section II (a) or Section II (b).

Section I—Applied Thermodynamics

A fuller knowledge of the subjects stated in "Applied Heat," Part I, together with the following :—

The properties of gases including variable specific heats, volumetric heats. The properties of vapours. Mixtures of gases and vapours. Entropy charts for steam and other vapours. Flow of gases and vapours through nozzles. Combustion. Effect of air-fuel ratio. Gas producers. Humidity of the atmosphere. Evaporative coolers. Air conditioning.

Air compressors and motors. Volumetric efficiency. Multi-stage compression. Centrifugal and other rotary compressors.

Air and vapour-compression refrigerators. Absorption machines. Choice of refrigerant.

Heat transfer. Elementary knowledge of radiation, conduction and convection. Applications to tubes, plates and lagging.

Section II (a)—Steam Engines

Steam engine cycles. The Rankine cycle with incomplete expansion. Compounding. Regenerative, resuperheating and binary-vapour cycles. The operating conditions of steam power plant and their effect upon efficiency.

Boiler plant, modern developments. Boiler testing and efficiency. Air supply and regulation. Superheaters, feed heaters, air preheaters. Condensers, extraction systems, de-aeration. Evaporators, accumulators.

Steam turbines. Efficiencies. Condition curves. Multi-stage machines. Turbines for back pressure, mixed-pressure, steam-extraction.

Further work on refrigeration, including multiple-effect cycle. The heat pump.

Section II (b)—Internal-combustion Engines

The cycles of operation of internal-combustion engines, with their representation on pressure-volume and temperature-entropy diagrams. The actual cycle as modified by air-fuel ratio, dissociation and variable specific heats. Volumetric efficiency, supercharging, methods of cooling. The constructional details of the various types of internal-combustion engines.

Combustion, detonation, properties of fuels. Shape of combustion head, turbulence. Indicators. Ignition systems, carburettors, feed pumps, fuel injection systems.

Elementary treatment of gas turbines. The regenerative cycle. Centrifugal and turbo-blowers and compressors. Condition curve and efficiencies.

The testing and performance of internal-combustion engines.

(9) Principles and Design of Electrical Machines

Fundamental principles underlying energy conversion in electrical machinery. Details of construction. Materials employed in construction. Measurement of losses, output, efficiency, temperature and regulation

Transformers

Types of construction and methods of cooling of single and polyphase transformers. Auto-transformers. Waveform of the magnetising current : the third harmonic and its effects, possible means of preventing

circulation of the third harmonic, in three-phase transformers. Equivalent circuits. Parallel operation. Surges in transformers. Control of voltage ratio, on-load and off-load devices ; induction and moving-coil regulators. Three-phase transformer connections in relation to balanced and unbalanced loads.

Magnetic Circuits of Rotating Machines

Effects of slots and radial ducts on air gap reluctance and on losses. Determination of flux distribution and leakage factors with salient and non-salient pole fields ; effect of armature reaction.

Direct Current Machines

Types of armature winding. Flux distribution on load ; commutation. Flash-over ; compensating windings ; commutating poles ; equipotential connections. Control of voltage or speed. Estimating performance. Parallel operation. Special types of machines (e.g., amplidyne, metadyne and arc-welding generators).

Synchronous A.C. Machines

Effect of flux distribution, winding distribution and span on the e.m.f. and its wave shape. The prominent harmonics in single and polyphase windings. Armature reaction ; effect on flux distribution ; regulation and excitation. Parallel operation ; phase swinging ; stability ; damping windings. Starting synchronous motors. Effects of short circuits.

Induction Machines

Theory of polyphase motor. Equivalent circuits. Circle diagram. Estimating performance from diagram. Characteristics of wound, single and double-cage rotors. Starting and speed control. Synchronous induction motor. Induction generator. Compensated induction motors. Phase advancers.

Principle of single-phase induction motor. Vector diagram. Starting. Characteristics.

A.C. Commutator Motors

Principles of single-phase series, repulsion and repulsion-induction motors. Load-speed characteristics. Commutation. Starting. Speed control. Principles and performance of three-phase motors.

Rotary Converters

Current and voltage relations for different numbers of phases. Copper loss ; distribution of heat. Armature reaction ; commutation ; flash-over. Voltage control. Hunting. Inverted operation.

Mercury Arc Rectifiers

Simple theory of operation, including overlap in multi-anode rectifiers. Transformer connections. Voltage and current relations. Wave-forms. Voltage regulation ; grid control. Inverted operation. Back-fire.

Design

Specifications of performance for different kinds of service. Factors governing choice of specific electric and magnetic loadings, number of poles, proportions of magnetic circuit, main dimensions, number and size of slots, type of winding, type of insulation and method of ventilation. Design of field and commutating-pole windings. Estimation of exciting current at no-load and full-load, losses, efficiency, regulation and temperature rise.

(Note.—It is the intention of the University gradually to introduce the rationalized M.K.S. system of units for calculations in Electrical Engineering.)

(10) Electrical Power

Theory of three-phase networks ; symmetrical components. Conduction of electricity through gases. Mechanisms of breakdown in gases, liquids and solids. Principles of arc extinction in switchgear. Impulse ratio and impulse testing. Mechanical forces due to heavy currents in busbars and cables.

Generation

Voltage control and parallel running of generators. Automatic voltage regulators. Interconnection of stations. Static and transient stability. Load control. Calculation of symmetrical and asymmetrical short-circuit currents. Generator protection. Substation and converting plant. Busbar and switching arrangements.

Transmission

Transmission systems. Calculation of line constants. Electrical calculations for short and long lines. Voltage regulation and control. Operation of lines in parallel. Insulation of cables and overhead lines ; Electric stress distribution. Corona phenomena. Transients (simple treatment). Protection against fault currents and excess voltages. Interference with communication systems. Calculation of mechanical stress and sag in overhead lines, including composite conductors.

Distribution

Systems : network calculations. Calculation and measurement of insulation resistance. Fault localization. Earthing and safety precautions.

Utilization

Electric drive ; starting and speed control for industrial purposes. Electrical heating ; furnaces ; welding. Electrochemical processes. Illumination.

Electric Traction and Allied Applications

Speed-time curves for trains and hoists ; energy consumption. Characteristics of traction and lift motors. Braking. Operation of lifts, trams, trolley-buses, locomotives and multiple-unit trains. Operating schedules and relevant calculations. Systems of supply. Feeding and distribution, converting plant.

Economics

Generating costs. Kelvin's law. Cost comparisons. Tariffs. Economics of inter-connection (the British grid).

(Note.—It is the intention of the University gradually to introduce the rationalized M.K.S. system of units for calculations in Electrical Engineering.)

(11) Electrical Measurements and Measuring Instruments*General Theory*

Systems of units and dimensions. Standards and sub-standards. Circuit theory applied to measurements. Analysis of wave forms. Simple problems in transients. Electric and magnetic field calculations. Screening.

Measurements

Methods for measuring current and resistance in absolute terms. Bridge and potentiometer methods (d.c. and a.c.). Methods of measuring high and low values of resistance ; high and low voltages ; large and small currents ; power and energy ; frequency and phase difference. Measurements at high frequencies, simple examples of resonance methods. The oscillographic recording of steady state and transient

phenomena. Methods of determining magnetic properties of ferromagnetic materials and electrical properties of dielectrics. Electrical methods of measuring temperature, mechanical strain, angular displacement and velocity. Illumination measurements.

Instruments

The construction and theory of operation of electromagnetic, electrostatic, electronic and thermal instruments for the direct measurement of current, potential difference, resistance, power, energy, frequency and power factor, construction and theory of operation of instrument transformers, galvanometers (d.c. and a.c.) ; fluxmeters ; oscillographs. Testing and calibration of commercial d.c. and a.c. indicating, recording and integrating instruments.

(12) Telecommunications

Electro-Acoustics

Propagation of sound : reflection, absorption, interference, resonance. Properties of microphones and sound reproducers.

Circuit Elements and Terminal Equipment

Principles of amplifiers, oscillators, frequency-changers, modulators and demodulators. Simple examples of relays and switching mechanisms employed in telegraphy and telephony. Application of photo-electric devices and cathode-ray tubes in vision transmission. Electromechanical resonators and their applications.

Circuit Theory and Line Propagation

Theory of networks with lumped constants. Theory of the uniform line. Repeated networks, simple filters, loaded lines. Reflections ; matching. Transmission losses.

Aerials and Radiation

Simple treatment of electromagnetic radiation ; radiation resistance. Aerial systems for transmission and reception ; directional properties. The elements of ionospheric propagation.

Communication Systems

Basic considerations in regard to frequency, bandwidth and speed of signalling. Carrier, multi-channel and multiplex systems. Signal to noise ratio. Simple examples of line and radio systems for telephone and telegraph transmission. Basic principles of radio position and direction finding. Basic principles of television. Elementary concepts of telephone switching systems.

Ultra High Frequency Technique

Simple treatment of the generation, transmission and reception of micro-waves including the principles of wave guides and simple radiators.

(Note.—It is the intention of the University gradually to introduce the rationalized M.K.S. system of units for calculations in Electrical Engineering.)

(13) Theory of Machines

A fuller knowledge of the subjects stated in "Theory of Machines," Part I, together with the following :—

Acceleration diagrams for mechanisms. Acceleration of geared systems. Performance of vehicles. Steam engine valve gears. Inertia governors. Inertia forces and balancing of reciprocating engines.

Elementary kinematics of a body moving in three dimensions. Couplings between non-axial shafts. Helical, bevel, worm and screw gearing. Elements of gyroscopic theory. Applications of the elementary principles of rigid dynamics.

The vibrations of mechanical systems including forced vibrations and the effects of viscous friction. The transverse vibrations of wires and beams. Whirling of shafts. Torsional vibrations. Approximate methods.

(14) Theory of Structures

(For examinations up to and including 1954 and alternative to the revised syllabuses (pages 1870-1872) in that year.)

Section I

A fuller knowledge of the subjects stated in the syllabus for "Strength of Materials and Theory of Structures," Part I, together with the following :—

Stress analysis of statically determinate plane and space frames. Method of tension co-efficients. Deflection of framed structures. Clerk-Maxwell's reciprocal theorem. Continuous beams. Elastic displacements of curved members. Elastic theory for members of composite materials excluding reinforced concrete. Suspension bridges with three and two-hinged stiffening girders. The general theory of struts subjected to longitudinal and transverse loading.

The analysis of statically indeterminate structures. Equilibrium hinged, two-hinged and fixed types. Stresses in statically indeterminate structures due to lack of fit of a redundant member. Temperature change and movement of supports. Continuous trusses. Bracket-loads on columns and portals. Braced portal frames. Theory and application of moment distribution method to continuous beams and stiff-jointed frames. Column analogy : elastic centre. The use of elastic splines and models for the analysis of structures.

Rolling loads. Influence lines for statically determinate structures : beams, lattice girders, beams with suspended spans and three-hinged arches. Influence lines for statically indeterminate structures : two-hinged arches, continuous beams, fixed beams and propped cantilevers.

Section II (a)—Civil Engineering Structures

The general application of the theoretical work of Section I to Civil Engineering Structures.

Reinforced concrete. Theories and design assumptions. Design of rectangular beams and slabs. Beams with single or double reinforcement. Tee beams. Shear in reinforced concrete beams and design of shear reinforcement. Reinforced concrete columns. Adhesion, grip length. Effect of shrinkage and creep on reinforced concrete members. Combined bending and direct stress.

An elementary knowledge of soil mechanics including the technique of testing and site exploration. The stability of cuttings and embankments. Earth pressure on retaining walls and the bearing capacity and settlement of foundations.

A general knowledge of the working stresses and methods of design relating to structures such as :—

Compound and plate girders, columns, roof trusses and building structures, riveted, pin-jointed and welded connections used in structures, foundations in steel and reinforced concrete, grillages, footings, compound, continuous and cantilever foundations, retaining walls of the cantilever and counterfort types, floor systems of the hollow tile and composite beam types, bridges, arches and portals, gravity dams.

Section II (b)—Aircraft Structures

The structural features of aircraft and the functions of their parts, with typical arrangements. Preliminary design processes. Aeronautical materials. Accelerometer and load factors. Strength requirements for symmetric manœuvres and gusts. The flight envelope. Aerodynamic balance calculations. Load distribution on main planes. Landing loads. Engine and propeller loads. Struts : torsional instability, energy method. Beams with end loads. Polar diagrams. Bending of fuselage rings. Torsion in wings and fuselages. Torsion of non-circular sections. Membrane analogy. Thin sheet construction. Tension field analysis. Elastic stability of flat sheet under end load. Problems arising from the flexibility of the aircraft structure. Introduction to flutter. Experimental methods.

(14a) Civil Engineering Structures

(For examinations in and after 1954 and alternative to the syllabuses above in that year.)

Candidates offering this subject are advised to offer also Strength and Elasticity of Materials.

A fuller knowledge of the subjects stated in the syllabus for “ Strength of Materials and Theory of Structures,” Part I, together with the following :—

Stress analysis of statically determinate plane and space frames. Method of tension co-efficients. Deflection of framed structures. Clerk-Maxwell's reciprocal theorem. Continuous beams. Elastic displacements of curved members. Elastic theory for members of composite materials. Simple theory of the suspension bridge. The general theory of struts subjected to longitudinal and transverse loading.

The analysis of statically indeterminate structures. Equilibrium and stress analysis of portal frames and elastic arches of the three-hinged, two-hinged and fixed types. Stresses in statically indeterminate structures due to lack of fit of a redundant member. Temperature change and movement of supports. Continuous trusses. Bracket-loads on columns and portals. Braced portal frames. Theory and application of moment distribution method of continuous beams and stiff-jointed frames. Column analogy : elastic centre. The use of elastic splines and models for the analysis of structures.

Rolling loads. Influence lines for statically determinate structures : beams, lattice girders, beams with suspended spans and three-hinged arches. Influence lines for statically indeterminate structures : two-hinged arches, continuous beams, fixed beams and propped cantilevers.

A general knowledge of both analytical and graphical methods will be expected.

The application of the above theoretical work to the following :—

Reinforced concrete. Theories and design assumptions. Bond. Design of rectangular beams and slabs. Beams with single or double reinforcement. Tee Beams. Shear in reinforced concrete beams and design of shear reinforcement. Reinforced concrete columns, excluding spirally reinforced types. Effect of shrinkage and creep on reinforced concrete members. Combined bending and direct stress. Elementary treatment of pre-stressed concrete.

An elementary knowledge of soil mechanics including the technique of testing and site exploration. The stability of cuttings and embankments. Earth pressure on retaining walls and the bearing capacity and settlement of foundations.

A general knowledge of the working stresses and methods of design relating to structures such as :—

Compound and plate girders, columns, roof trusses and building structures, riveted, pin-jointed and welded connections used in structures, foundations in steel and reinforced concrete, footings, compound, continuous and cantilever foundations, retaining walls of the cantilever and counterfort types, floor systems of the hollow tile and composite beam types, bridges, arches and portals.

(14b) Aircraft Structures

(For examinations in and after 1954 and alternative to the syllabus on pages 1869-1870 in that year.)

Candidates offering this subject are advised to offer also **Strength and Elasticity of Materials**.

Structural features and Materials of Aircraft. Physical properties of ferrous, non-ferrous, and plastic materials and of wood with reference to their correct application in Aircraft construction : fatigue, creep, elementary minimum weight considerations.

Flight Envelope. Dynamic loads, land, ground manœuvring, engine and propeller loads. Balancing out calculations. Strength requirements, proof and ultimate factors.

A fuller knowledge of the subjects stated in the syllabus for Strength and Elasticity of Materials and Theory of Structures, Part I, together with the following :—Two-dimensional stress-strain relations. Introduction to the Airy stress function and simple applications. Bending of plates. Simple examples of St. Venant Theory of torsion, e.g., thin rectangle, ellipse, membrane analogy. Materials having non-linear stress-strain relations.

Statically determinate space frames, method of tension coefficients, deflection. Redundant and stiff frameworks, rings. Beams under end and transverse loads, continuous beams, moment distribution method. Euler buckling, energy method, non-uniform struts, inelastic buckling. Elementary torsional instability of I, Z and angle sections. Curved beams. Pressurized non-circular tubes. Bredt-Batho theory of torsion and simple theory of bending of single and multi-cell thin walled cylindrical tubes. Torsion of open section, St. Venant torsion constant. Warping of closed and open tubes. Shear centre and flexural axis. Stressed skin construction, elastic instability, stiffened panels in compression and shear. Composite sheets. Load diffusion in panels. Axial constraint stresses in four-boom wing structure, zero warping centre. Conditions at built-in-end.

Aeroelasticity—Estimation of lowest torsional and flexural frequencies. Effects of elastic distortion, divergence, control reversal. Elements of flutter, self-excited oscillations, couplings, wing flutter, control surface flutter, mass balancing.

Testing methods in Aircraft Structures—Elementary notions of wing and compression panel testing for strength and stiffness. Condition of similitude for model tests. Resonance tests. Electrical strain gauges.

(15) Strength and Elasticity of Materials

Section I

A fuller knowledge of the subjects stated in “Strength and Elasticity of Materials,” Part I, together with the following :—

Standard mechanical tests for strength, ductility, hardness, creep and resistance to impact and fatigue.

Systems of complex stress. Principal stresses and principal planes. Principal strains. Relation between the elastic constants. Resilience in tension, bending and torsion. Theories of elastic failure. Effect of impact loads on ties and beams. Encasté beams. Distribution of shearing stresses in beams. The general theory of struts subjected to axial and parallel eccentric loads.

Stresses and strains in thick cylinders subjected to fluid pressure. Compound cylinders. Flat spiral springs and leaf springs. Simple cases of free longitudinal, transverse and torsional vibrations.

Section II (a)

More difficult questions on the work of Section I together with :—

Deflections of beams due to shear. Theory of bending of curved bars with simple applications. Laterally loaded struts and ties. Wire wound cylinders. Open coiled helical springs. Stress analysis of rotating rings and discs. Stresses in the simple cases of thin plates subjected to normal loading.

Section II (b)—Engineering Metallurgy

Elements of crystallography as applied to metallurgy. More detailed discussion of thermal equilibrium diagrams. Typical constitutional diagrams of the common non-ferrous engineering alloys. The iron-carbon diagram. Metallography (microstructure and macrostructure), heat-treatment and uses of plain carbon and alloy steels. Cast irons including high-duty, special and malleable irons. Classification of heat-treatment and melting furnaces. Types of industrial pyrometers. Melting and casting of ferrous and non-ferrous metals and alloys. Production of steel ingots ; ingot defects. Effect of elevated temperatures on metals and alloys. Corrosion of metals and methods of protection. Typical examples of deformation processes. Typical welding processes ; examination of welds. Non-destructive testing of metals and alloys ; radiological, magnetic and other methods.

(16) Mathematics

The subject of the syllabus for Part I together with :—

Further partial differentiation ; maxima and minima of functions of several independent variables, including method of least squares ; change of independent variables.

Elementary vectors, including scalar and vector products.

Fourier series and numerical harmonic analysis.

Line, surface, and volume integrals.

Differential equations, including first and second order equations, integrable by quadratures ; linear differential equations with constant coefficients, equations reducible to these, and simultaneous linear equations with constant coefficients ; easy examples of solution in series ; simple partial differential equations, including solution by separation of variables.

Functions of a complex variable, elementary ideas and simple examples of conformal transformation.

Three-dimensional co-ordinate geometry of the straight line, plane, and the simpler curved surfaces ; tangent planes and normals.

Spherical trigonometry.

Plane motion of a rigid body ; work, energy, momentum and moment of momentum.

Virtual work ; stationary energy ; stability of equilibrium.

Questions may be set involving the formulation and solution of mathematical problems associated with engineering subjects.

(17) Mechanics of Fluids

(For examinations up to and including 1954 and alternative to the revised syllabuses (page 1874) in that year.)

Section (a)—The syllabus of Part I, “Mechanics of Fluids,” together with :—

Flow of compressible fluids. Variation of the Bernoulli constant across the stream lines. Vorticity. Distribution of pressure and velocity in free and forced vortices. Flow over flat-crested and submerged weirs. Velocity of approach. Experimental determination of viscosity and the application to lubrication. Dash pots. Dynamical similarity. Application to flow in pipes and resistance of submerged and partially submerged bodies. Hydraulic models. River gauging ; instruments and methods. Catchment areas : relation of rainfall and run-off. Storage and conveyance of water. Branched pipes. Power transmission by pipe-lines. Waterhammer. Non-uniform flow in channels. Backwater function. Hydraulic jump. Venturi flume. General theory of turbines and centrifugal pumps. Unit speed. Unit power. Specific speed. Governing of turbines. Surge tanks. Reciprocating pumps, accumulators, intensifiers and other hydraulic machines.

Section (b)

Airflow Theory and Experiment.—Relevant physical properties of the atmosphere. Bernoulli's theorem for compressible flow. Laws of viscosity and the viscous stresses in two-dimensional flow. Aerodynamical applications of the principle of similitude ; Reynolds, Mach and Froude numbers. Theory and practice of wind tunnel measurement, systematic tunnel corrections, properties of aerofoils. Elements of potential, incompressible flow. Single rectilinear vortex and vortex pairs. Constancy of circulation. Effects of parallel walls. Elements of Prandtl's aerofoil theory and applications. Thin aerofoil theory ; Glauert's and Ackeret's theories. Applications of the Joukowski transformation. Elements of boundary layer theory. Von Karman's theory. Flat plate friction. Reduction of profile drag. Elements of airscrew theory.

Aircraft Motion.—Estimation of glider drag. Equilibrium in steady rectilinear and circular flight. Static stability. Speed range, useful load, rate of climb, ceiling. Prediction of performance, including method of induced drag ; wing loading, aerodynamic efficiency. Testing and

reduction of performance. Simple manœuvres and elementary theory of spinning. Nature of stability and disturbed aeroplane motion. Systems of control. Rolling moments and the dihedral angle. Full-scale experiments.

(17a) Mechanics of Fluids

(For examinations in and after 1954 and alternative to the syllabus above in that year.)

The syllabus of Part I, "Mechanics of Fluids," together with :—

Applications of Bernoulli's equation for compressible fluids. Variation of the Bernoulli constant across the stream lines. Circulation. Distribution of pressure and velocity in free and forced vortices. Flow over flat-crested and submerged weirs. Velocity of approach. Experimental determination of viscosity and the application to lubrication. Dash pots. Dynamical similarity. Application to flow in pipes and resistance of submerged and partially submerged bodies. Hydraulic models. River gauging ; instruments and methods. Catchment areas : relation of rainfall and run-off. Storage and conveyance of water. Branched pipes. Power transmission by pipelines. Waterhammer. Non-uniform flow in channels. Backwater function. Hydraulic jump. Venturi flume. General theory of turbines and centrifugal pumps. Unit speed. Unit power. Specific speed. Governing of turbines. Surge tanks. Reciprocating pumps, accumulators, intensifiers and other hydraulic machines.

(17b) Aerodynamics

(For examinations in and after 1954 and alternative to the syllabus on page 1873 in that year.)

Incompressible Flow

Elements of potential flow in two dimensions ; stream function and velocity potential, impulse and energy ; superposition of source, sink, doublet, circulation ; method of images. Straight vortices. Complex potential function, conformal transformation, Joukowski aerofoils. Kutta-Joukowski theorem. Thin aerofoil theory, pitching moment. Thickness distribution, maximum velocity ratio. Constraint of parallel walls. Hodograph plane. Cascades. Lanchester-Prandtl wing theory, tunnel constraint, airscrew theory. Steady viscous flow ; stresses, boundary layer equations, Karman's momentum theorem, laminar skin friction, separation. Introduction to turbulent flow, turbulent boundary layer with constant pressure, factors affecting transition, power formulae for flat plates. Reduction of profile drag, low drag sections, boundary layer control.

Compressible Flow

Bernoulli's theorem in one dimension. Equation of continuity. Euler's equations and their integration. Kelvin's circulation theorem. General nature of isentropic flow, transonic changes, Mach waves. Glauert's and Ackeret's approximations for small perturbations. Normal and inclined plane shock waves, expansion at a sharp corner. Applications to the Pitot tube, flow near bent walls, simplified aerofoils.

Experiment

Wind tunnels, including high speed and supersonic tunnels. Methods of measurement. Applications of dimensional theory. Model results, including pressure distributions, profile drag, tip vortices, downwash, compressibility effects, shock stall. Scale effects.

(18) Surveying

For the present the University will provide Chambers' seven figure mathematical tables at the examination.

Chain surveying, traverses, traverse sheets and plotting by co-ordinates, adjustment of error of closure. Levelling, including precise and barometric levelling, contouring. Plane table surveying. Fundamental principles of photographic surveying. Tacheometry and allied methods. Hydrographical surveys of rivers, harbours and coast-lines.

Setting out simple, compound, transition and vertical curves; tunnelling, plumbing, triangulation. Areas, volumes, mass-haul. Reconnaissance.

The level, theodolite and other surveying instruments in general use, their adjustment and maintenance. Instrumental errors and their elimination. Optical laws as applied to surveying.

Major triangulation. Satellite stations. Base lines; trigonometrical levelling. Curvature of the earth and refraction. Latitude and longitude by account. Convergence of meridians. Setting out of boundaries.

Field Astronomy. Time, longitude, latitude and azimuth.

Adjustment of triangulation and other observations. Method of least squares.

(19) Electronics*General*

Electrical structure of matter; linear and non-linear conductors; insulators. Thermionic, photo-electric, secondary and cold cathode emission; contact rectification; fluorescence, phosphorescence. Conduction through gases. Piezo-electric and magnetostriction effects. Elementary electron ballistics.

Valves

Underlying principles, construction and characteristics of high-vacuum valves, cathode-ray tubes, photo-electric cells, electron multipliers, gas-filled valves and X-ray tubes.

Circuit Theory

Series and parallel resonance; Q factor; coupled circuits. Loss-free high-frequency transmission line. Screening; interference.

Rectification

Hard and gas-filled rectifiers: grid control. Metal rectifiers. Smoothing; voltage doubling; typical circuits. Power rectifiers and inverters.

Amplification

Principles of amplification by valve circuits. Positive and negative feed-back. Distortion. Noise. Efficiency. Design of simple voltage and power amplifiers.

Oscillators

Principles of sine-wave and pulse generators. Relaxation oscillators. Elementary design considerations.

Cathode-Ray Oscillography

High and low-voltage oscillographs: beam focus, intensity and deflection control. Screen materials. Time bases.

Applications

Electronic control systems. High-frequency eddy-current heating. Dielectric heating. Counting and time mechanisms. Accelerators for charged particles. Generation of supersonic waves. Gas-discharge lamps.

(Note.—It is the intention of the University gradually to introduce the rationalized M.K.S. system of units for calculations in Electrical Engineering.)

(20) Mechanics of Flight**(For examinations in and after 1954.)***Aircraft Performance and Efficiency*

The atmosphere. Types of aircraft, equilibrium in flight, systems of sustentation and propulsion, applications of wing and airscrew theory, including load distribution. Performance of reciprocating and gas turbine engines. Applications of wind tunnel data, interference, estimation of glider drag. Methods of predicting aircraft performance, adaptation to high speeds, reduction and analysis of full-scale flight tests. Altitude, wing-loading and slipstream effects on performance and efficiency. Take-off and landing runs, assisted take-off, range and endurance.

Stability and Control

Forces and moments arising on a rigid aeroplane in disturbed flight, dihedral, stabilising and control surfaces. Longitudinal static stability with elevators fixed and free, downwash, wake and slipstream effects, static margins. Control forces, aerodynamic balancing of controls, response effect on hinge moments. Manœuvrability. Equations of motion referred to moving axes. Theory of small oscillations of a rigid aeroplane in straight gliding flight, criteria for stability, separation of symmetric and asymmetric motions, Glauerts non-dimensional system. Approximate treatment of longitudinal dynamical stability, graphical representation, significance of the roots of the lateral stability quartic. Numerical and experimental estimation of derivatives. Stalling effects.

MASTER OF SCIENCE (ENGINEERING)

REGULATIONS FOR THE REGISTRATION OF EXTERNAL STUDENTS FOR HIGHER DEGREES

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma or postgraduate certificate will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry to the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee, provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and withdraws, fails, or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required to cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted. A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed in the Regulations, obtain the necessary entry papers, and return them to the University with the examination fee.

FEES							£	s.
Registration Fee	..	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	..	2	2

M.Sc. (Eng.) Examination

INTRODUCTORY NOTES

1. A candidate for the Degree of Master of Science (Engineering) as an External Student must have obtained the Degree of B.Sc. (Engineering) of this University and have followed a course of postgraduate study or investigation in a subject approved by the University.

2. The University does not prescribe subjects for the M.Sc. (Eng.) Examination ; and a candidate is required to submit his own proposals at the time when he applies for registration for the Degree. A candidate who is in doubt about the type of subject which might be acceptable may, however, apply to the External Registrar for advice and information.

3. A candidate will be expected to have developed a critical approach to his subject, and to have a thorough understanding of the fundamental principles involved, but will not be expected to have reached the same depth of treatment or to show the same degree of originality which is expected of a candidate for the Ph.D. Degree. The standard of the examination will be that which might reasonably be attained by a full-time student after a postgraduate course extending over about eighteen months.

4. Each candidate is required to submit a dissertation or a thesis or both, and may also submit, as subsidiary matter in support of his candidature, any contribution or contributions to the advancement of knowledge which he may have published independently or conjointly. A candidate who submits conjoint work will be required to state fully his own share in that work.

5. A dissertation in the Faculty of Engineering should present an ordered and critical exposition of existing knowledge of the subject.

A thesis should present original work done by the candidate. The candidate must indicate how far the work embodies the results of his own research or observations and in what respect his investigations appear to him to advance Engineering knowledge or practice.

In both a dissertation and a thesis an appreciation of practical aspects of the subject discussed will normally be expected.

6. Published work, provided that it is written in a suitable form, and published in the candidate's own name, may be submitted as the dissertation or thesis, but the requirements of a dissertation or thesis may be, and often are, different from those of a paper published in a technical or a scientific journal. A reprint of such a paper, even if it contains information of technical value to specialists in a certain field, is not necessarily acceptable. A clear and balanced presentation is one of the things demanded of a candidate for this Degree.

7. A candidate is advised to notify the External Registrar of his intention to submit his entry about three months before the entry is made.

8. A candidate may submit his entry at any time, provided that he has complied with the Regulations governing Registration and approval, but in view of the Long Vacation, which extends from the end of June until October, a candidate who makes his entry later than May 1 runs the risk of considerable delay in the decision of the Examiners.

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination, each candidate must (a) have obtained the degree of Bachelor of this University at least two academic years earlier (in exceptional circumstances this interval may be reduced) ; (b) have obtained the B.Sc. (Eng.) Degree or B.Sc. (Eng.) Degree in Chemical Engineering or in Mining or in Metallurgy of this University or, unless specially exempted, have passed a qualifying examination ; (c) have been registered as an External Student for the M.Sc. (Eng.) Examination in accordance with the dates specified below.

REGISTRATION

1. A candidate for the M.Sc. (Eng.) Degree must normally apply for registration not less than eighteen months before he desires to present himself for examination but a candidate who can submit satisfactory evidence that he has already carried out work in his subject and that his time available for study is adequate may, on special application, be granted late registration on payment of the late registration fee.

2. A candidate must submit with his application for registration the title of his general subject and the title(s) of his dissertation and/or thesis together with an outline of his proposed syllabus or method of treatment.

3. A candidate whose application for registration is approved will be notified of the title(s) and syllabus(es) , whether in their original or in an amended form, which have been approved by the University, and no change may subsequently be made by the candidate unless he obtains the formal approval of the University.

4. When a candidate submits his application for approval of subject and syllabus, he must send with it a registration fee of £2 2s. If the application is approved he will be registered for the examination, and the registration will remain valid for five years. A candidate may then apply for registration again in the normal way and in accordance with the regulations in force at the time.

ENTRY TO EXAMINATION

1. Entry, which may be made at any time, must be made on the appropriate form which may be obtained on application to the External Registrar.

2. The entry form, together with the original copy of the approved syllabus must be returned to the University with three copies of the dissertation and/or thesis, two copies of which must be bound in accordance with the instructions issued with the entry form, and three copies of any subsidiary contributions.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.	d.
For each entry to the examination ..	15	15	0
For re-entry as a referred candidate ..	7	17	6

2. All cheques should be made payable to the University of London or Bearer and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

SCHEME OF EXAMINATION

1. The dissertation and/or thesis shall be written in English, on a subject approved by the University.

2. A candidate shall not be permitted to submit a dissertation or a thesis for which a degree has been conferred upon him in this or in any other University, but a candidate may incorporate such work in a dissertation or a thesis covering a wider field, provided that he shall clearly indicate both on his entry form and also on his dissertation or thesis the full extent of the work which has been thus incorporated.

3. A candidate who submits a thesis for examination shall be required to declare the extent to which the thesis embodies the result of his own researches or observations and in what respects he considers that his thesis advances engineering knowledge or practice. If he also submits work which has been published conjointly as subsidiary matter in support of his candidature he will be required to state also his own share in such work.

4. Each candidate will be required to satisfy the Examiners in respect of his knowledge of the general subject which he offers, and the fundamental principles relating thereto, and also in respect of his detailed knowledge of the particular branch or aspect of the general subject to which he has devoted special study and/or research.

5. After the Examiners have read the works submitted, they may, if they think fit, and without further test, recommend that the candidate be rejected. In all other cases, the Examiners shall examine the candidate orally, and they may require him to answer a written paper or papers on his subject or on matters related thereto.

6. For the purpose of the oral examination and for the written examination (if required), the candidate shall be required to present himself at such place as the University may direct and upon such day or days as may be notified to him.

7. If the works submitted, though inadequate for the award of the degree, shall seem of sufficient merit to justify such action, the Examiners may, after having examined the candidate orally, recommend to the Senate that he be referred and be permitted to re-present his dissertation and/or thesis in an amended form within twelve months from the decision of the Senate with regard thereto.

8. Copies of all successful dissertations and theses, together with any subsidiary contributions submitted will be deposited for reference in the

University Library. Any copies of theses or dissertations which are not required by the University after the examination has been completed will be returned to the candidate.

NOTIFICATION OF RESULT

1. A list of candidates for the Degree of M.Sc. (Engineering) who pass to the satisfaction of the examiners, arranged in alphabetical order, shall be published at the University.

2. A copy of the Pass List will be sent to each successful candidate. An individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. A diploma for the Degree of M.Sc. (Engineering) under the seal of the University shall be delivered to each successful candidate.

2. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

RESEARCH FUND

The Senate has at its disposal a Research Fund from which grants may be made to individuals for the provision of materials and apparatus for specific projects of research. Any External graduate or student for an External Higher Degree who desires to be considered as an applicant for a grant should in the first place communicate with the External Registrar.

DOCTOR OF PHILOSOPHY

Regulations for the Degree of Ph.D. are contained in a separate pamphlet which may be obtained on application to the External Registrar.

DOCTOR OF SCIENCE (ENGINEERING)

1. Every candidate for the Degree of Doctor of Science (Engineering) as an External Student must have obtained as an External Student in this University (1) the B.Sc. (Eng.) Degree and (2) the M.Sc. (Eng.) or Ph.D. Degree in the Faculty of Engineering. Nevertheless a candidate may in exceptional circumstances be exempted by the Senate, on the grounds of published work, from the requirement of obtaining the M.Sc. (Eng.) or Ph.D. Degree as an External Student.

2. The Degree is awarded only for work which affords definite evidence that the candidate has initiated and conducted research in Engineering Science of such quality as has given him an authoritative standing.

3. A candidate may make application at any time for the Degree and must at the same time submit evidence of his qualifications, such evidence to consist of published papers or books containing original contributions to the advancement of knowledge. A substantial amount of the work submitted must be independent work published in the candidate's own name. If conjoint work is submitted the candidate must produce satisfactory evidence as to the extent to which he was responsible for the initiation and conduct or direction of such conjoint work. The candidate is required to indicate what part, if any, of the work has been submitted for a Degree in this or any other University by himself or, in the case of conjoint work, by any of his collaborators.

[In these Regulations the term "published" shall mean printed in a periodical or as a pamphlet or book on sale to the public through booksellers. The purpose of requiring publication is to ensure that the work submitted has been available for criticism by relevant experts, and the examiners are given discretion to disregard any of the work submitted if, in their opinion, the work has not been so available for criticism either on account of its inaccessibility or because it has been submitted for the Degree at too short an interval after its publication.]

4. The examiners may, at their discretion, require the candidate to present himself for an interview.

5. Every candidate must apply to the External Registrar for an entry form which must be returned, duly completed, with a fee of 20 guineas (£21) and accompanied by four copies of such printed contributions to scientific knowledge as he may desire to submit.

[Candidates are informed that, in view of the Summer Vacation, the result of any entry submitted later than 1 May is liable to considerable delay. All candidates should give preliminary notice of intention to enter three months before sending in their entry forms.]

6. All cheques should be made payable to the University of London or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account".

7. A candidate who is not recommended for the award of the Degree will be required on re-entry for the examination to comply with the Regulations in force at the time of his re-entry.

8. After the Report of the Examiners shall have been approved by the Senate the External Registrar shall publish a list of candidates on whom the Degree has been conferred.

9. A copy of the published work for which a Degree has been conferred shall be deposited in the University Library and shall be open for public reference.

10. A Diploma for the Degree of D.Sc. (Eng.) under the Seal of the University shall be delivered to each successful candidate.

A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

COLLEGES AND INSTITUTIONS RECOGNIZED FOR THE PURPOSE OF THE B.Sc. (ENG.) DEGREE

1. *Recognized for both the Internal and External Degrees :—*

University College.
King's College.
Imperial College—City & Guilds College.
Queen Mary College.
Battersea Polytechnic.
Northampton Polytechnic.
West Ham College of Technology.
Woolwich Polytechnic.

Note.—The first four named are Schools of the University and normally admit only those who propose to study for three years as full-time Internal Students.

2. *Recognized for the External Degree only :—*

Aberdeen, Robert Gordon's Technical College.
Barnsley Mining and Technical College.
Belfast Municipal College of Technology.
Birmingham College of Technology.
Bournemouth Municipal College.
Bradford Technical College.
Brighton Technical College.
Burnley Municipal College.
Cardiff Technical College.
Cheltenham, North Gloucestershire Technical College.
Chesterfield College of Technology.
Coventry Technical College.
Dartford, The County Technical College.
Derby Technical College.
Dundee Technical College.
Edinburgh, Heriot-Watt College.
Farnborough, Royal Aircraft Establishment Technical College.
Gillingham, Medway Technical College.
Glasgow, Royal Technical College.
Halifax Municipal Technical College.
Huddersfield Technical College.
Hull Municipal Technical College.
Kingston Technical College.
Leeds College of Technology.
Leicester College of Technology.
Lincoln Technical College.
London, Acton Technical College.
London, The Polytechnic, Regent Street.
London, The Royal Naval College, Greenwich.
London, South-West Essex Technical College.
Loughborough College of Technology.
Luton and South Bedfordshire College of Further Education.
Manchester Municipal College of Technology.
Middlesbrough, Constantine Technical College.
Nottingham and District Technical College.
Norwich City College and Art School.
Oxford, School of Technology.
Paisley Technical College.
Plymouth and Devonport Technical College.
Portsmouth Municipal College.
Preston, Harris Institute.
Rotherham, College of Technology.
Rugby College of Technology and Arts.
St. Helens, Gamble Institute.
Salford, Royal Technical College.
Shrivenham, The Royal Military College of Science.
Stafford, County Technical College (Part I only).
Stoke-on-Trent, North Staffordshire Technical College.
Sunderland Technical College.
Swindon, The College.
Treforest, Glamorgan Technical College.
Wigan and District Mining and Technical College.
Wolverhampton and Staffordshire Technical College.

UNIVERSITY OF LONDON



REGULATIONS FOR THE B.Sc. (ENG.) EXAMINATION IN CHEMICAL ENGINEERING for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

B.Sc. (ENG.) EXAMINATION IN CHEMICAL ENGINEERING

INTRODUCTORY NOTE

1. The B.Sc. (Eng.) Degree in Chemical Engineering will be awarded to candidates who are successful in both Parts of the Final Examination. Successful candidates will be awarded First Class Honours, Second Class Honours, or a Pass Degree.
2. Candidates for the Degree of Bachelor of Science (Engineering) in Chemical Engineering as External Students are required to satisfy the minimum University and Faculty entrance requirements ; to have been registered as External Students for the B.Sc. (Eng.) Examination in Chemical Engineering ; to have obtained the necessary qualifications for admission to the Final Examination, Parts I and II, and to pass these two examinations.
3. The standard of the examination in Part I is that which would normally be required of a whole-time student after a course extending over two academic years subsequent to completing the Intermediate Examination in Science or one of the accepted alternatives, and is normally to be taken in two Sections. The standard of the examination in Part II is that which would normally be required of a whole-time student after a course extending for a further year subsequent to completing the Part I examination.
4. Candidates who have obtained the B.Sc. Degree, whether Pass or Honours, in the Faculty of Engineering are not permitted in any circumstances to re-enter for the examination in the same branch ; but they may enter for the examination in any other branch.

FACULTY REQUIREMENTS

A candidate who has satisfied the minimum University entrance requirements by means of a General Certificate of Education will be required to have passed in Mathematics at Ordinary or Advanced Level.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to Section I of Part I of the Examination, each candidate must :—

(a) have satisfied the minimum University and Faculty entrance requirements and have been registered as an External Student preparing for the degree of B.Sc. (Eng.) in Chemical Engineering ;

(b) (i) have passed the Intermediate Examination in Science in Pure Mathematics, Applied Mathematics [or in Mathematics (Pure and Applied)], Physics and Chemistry ;

or (ii) have passed at main subject standard at a Higher School Certificate Examination or Examinations recognized by the Ministry of Education as an approved second examination in Secondary Schools in Pure Mathematics [or in Mathematics (Pure and Applied)], Physics and Chemistry ;

or (iii) have passed at main subject standard at a Higher School Certificate Examination or Examinations recognized by the Ministry of Education as an approved second examination in Secondary Schools in Chemistry ; at main subject standard in two of the subjects Pure Mathematics, Applied Mathematics and Physics and at subsidiary standard in the third.

(A candidate who has obtained a Higher School Certificate with passes at main subject standard in one or more of the subjects required will be permitted to complete his qualification by passing in the remaining subject, or subjects, at the Intermediate Examination in Science. The regulations for this examination should be consulted.

A candidate who has not qualified for the award of a Higher School Certificate but who has been permitted to count successes gained in 1949 or 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum entrance requirements of the University will be permitted to count either or both of these as part of his qualifications for admission to the degree.)

or (iv) have passed at the Advanced Level in an examination or examinations for the General Certificate of Education awarded by one of the approved University Examining Bodies in the subjects corresponding to Mathematics, Physics and Chemistry at the Intermediate Examination in Science.

(A candidate who has passed at the Advanced Level in the General Certificate of Education Examination or Examinations in two or more of the subjects required, will be permitted to complete his qualification by passing in the remaining subject or subjects at the Intermediate Examination in Science. The regulations for this examination should be consulted.)

or (v) have passed the Intermediate Examination in Engineering of this University with Chemistry as his optional subject. (A candidate who was referred in Engineering Drawing at this examination will also be admitted to Section I of Part I of the Final.) Candidates who did not pass in Chemistry will be required to pass in this subject at the Intermediate Examination in Science (see para. 2).

or (vi) have obtained the Engineering Cadetship *Diploma* of the Ministry of Education and have passed in Chemistry at one of the examinations specified above ;

(c) have attended a prescribed course of study at an Institution recognized for the purpose by the University, except as provided for in para. 5 below :

(d) have obtained approval of candidature for the examination.

2. Candidates who are required to pass in one subject at the Intermediate Examination in Science in order to complete qualification 1 (b) above may apply for approval of candidature for Section I of Part I and may enter for the examination in Section I concurrently with the Intermediate Examination in Science in the remaining qualifying subject, but in the event of failure in the Intermediate subject no report will be made on their performance at Part I.

3. To be admitted to Section II of Part I each candidate must (a) have passed Section I, or have been referred in one subject thereat, or have obtained permission to take Sections I and II together, (b) have attended a course of study at an Institution recognized for the purpose by the University (except as provided for below) and (c) have obtained approval of candidature for the examination.

4. To be admitted to Part II each candidate must (a) have been registered as an External Student at least three academic years previously, (b) have passed Part I, unless referred thereat, (c) have attended a course of study at an Institution recognized for the purpose by the University (except as provided for below) and (d) have obtained approval of candidature for the examination.

5. A candidate who is not in attendance at a recognized Institution may apply for admission to the examination if he produces evidence satisfactory to the Council for External Students that his previous training and/or practical experience has been adequate. Such candidates must *either*

(a) be at least 25 years of age and have had at least 5 years' satisfactory practical engineering or chemical engineering experience (excluding apprenticeship or similar training period); *or*

(b) have passed approved examinations required for a degree in engineering or chemical engineering in another University in the British Commonwealth approved by the Council for External Students, or hold a corresponding approved qualification granted in a foreign country.

Each application for admission to the examination under this regulation must be made on the appropriate form and must be accompanied by a fee of £1 1s. which is in no case returnable. The applicant may be required to submit records of laboratory and drawing office work which he has carried out before his application is accepted (*see also page 1906, para. 7*).

6. A concession granted under paragraph 5 above will be valid for four years but application may be made by the candidate for its renewal.

7. A candidate in attendance at a recognized Institution for other subjects is not debarred from pursuing for either Part of the examination a course in Mathematics by private study or by other means, in lieu of attendance for such a course at a recognized Institution.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the fourth Monday in June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the two Parts of the examination during the first term of their course of study for Section I of Part I, and not later than 23 January of the year in which this Section is taken. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 23 January, application may be accepted after this date on payment of the late fee of £1 1s. which is not returnable, but no application will be accepted after 20 February in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 8 February. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 13 March, and the candidate list will be closed on 20 March. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Part I, Section I alone	3	3
Part I, Section II alone	3	3
Whole of Part I	6	6
Part II	6	6
Re-examination in referred subject at Part I	2	2

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. Candidates taking the oral-practical examination will be required to pay an additional fee of £3 3s. for Section I of Part I and £4 4s. for Section II of Part I and £4 4s. for Part II.

3. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

4. A candidate who withdraws from the examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

1. The examination is divided into two parts as follows :—

PART I

(1) Strength and Elasticity of Materials and Theory of Structures	..	..	..	One 3-hour paper
(2) Mechanics of Fluids	..	..	..	" "
(3) Applied Heat	..	..	..	" "
(4) Theory of Machines and Physical Metallurgy	..	..	..	" "
(5) Applied Electricity	..	..	..	" "
(6) Inorganic Chemistry	..	..	..	" "
(7) Physical Chemistry	..	..	..	" "
(8) Organic Chemistry	..	..	..	" "
(9) Mathematics I	..	..	..	" "
(10) Mathematics II	..	..	..	" "
(11) Engineering Drawing	..	..	..	One 4-hour paper

There will also be a one-day practical examination in Chemistry.

2. Part I, the course for which shall extend over the equivalent of two years' full-time study, is divided into two Sections as follows, and Section I must normally be taken before Section II. A candidate may, however, on special application, be permitted to take Sections I and II on the same occasion. The following papers may be offered :—

Section I

Mathematics I and Engineering Drawing, together with any other four written papers except Mathematics II.

Section II

Mathematics II and the practical examination in Chemistry together with the remaining four written papers not offered at Section I.

3. Candidates who fail to satisfy the Examiners in the whole of Section II of the examination, but satisfy the examiners at the practical examination in Chemistry, may be credited with the practical examination for the purposes of re-entry to Section II. Candidates who avail themselves of this concession on the results of examinations held in or before 1952 will be awarded the pass mark only for Practical Chemistry in the final assessment for Honours.

PART II

- | | |
|--|------------------|
| (1) Unit Chemical Engineering Operations and Processes I | One 3-hour paper |
| (2) Unit Chemical Engineering Operations and Processes II | ” ” |
| (3) Transport and Storage of Materials and Heat Transmission | ” ” |
| (4) Fuel, Combustion and Power Generation and Distribution | ” ” |
| (5) Materials of Construction, Plant Design, Organization and Layout of Works .. | ” ” |

3. The course for Part II should extend over the equivalent of one year of full-time study.

4. The examination will include, in addition to the written papers and the practical examination in Chemistry, an examination of the candidate's course work, and the examiners shall be at liberty to test any candidate by means of oral questions.

5. The marks obtained in Part I will be combined with those obtained in Part II for the purpose of the classification of Honours.

6. All answers to examination questions shall be written in English unless instructions are given to the contrary.

7. A candidate who has not attended a recognized Institution but has been registered under clause 5 of the “Qualifications for Admission” will be required (a) if registered under clause 5 (a) to submit in writing details of engineering experience and/or details of course work performed in the different subjects at an educational institution *or* if registered under clause 5 (b) to produce records of laboratory and drawing office work performed in the different subjects at the University or College where he obtained the degree or approved qualification; (b) to attend an oral-practical examination in London appropriate to that Part or those Parts of the examination for which he is entered of not more than six hours' duration comprising (i) an oral examination or (ii) tests in an appropriate laboratory or (iii) both, at the discretion of the examiners; and (c) to pay an additional fee of £3 3s. for Section I of Part I and £4 4s. for Section II of Part I and £4 4s. for Part II of the examination.

REFERENCE

1. A candidate at either Section of Part I of the examination or a candidate permitted to take Sections I and II on the same occasion, who fails to reach the minimum standard in any one subject only, may be referred, i.e., he may be permitted on the recommendation of the examiners to present himself in that subject on one or more subsequent occasions.

2. A candidate who has completed the whole of Part I with the exception of a referred subject, and who enters for his referred subject concurrently with Part II, and who fails in his referred subject only, may be credited with Part II, but the degree cannot be awarded until he completes Part I.

3. The examiners will recommend that the candidate be referred only if his failure in the subject is not serious, and if his performance in the remaining subjects is reasonably good.

COURSE WORK AND PRACTICAL WORK

1. The examination will include, in addition to the written papers, an examination of the candidate's course work, and a candidate who fails to satisfy the examiners in course work in any Part I subject will be notified that he has failed in course work in that subject and consequently in the subject as a whole. In Chemistry there will also be a one-day practical examination.
2. The amount of course work must be equivalent to that done during a normal *three*-year full-time course of study.
3. Course work for Part II will be considered as a whole and not with reference to each individual subject.
4. The course work submitted in any subject must be carried out at a duly recognized Institution and be certified by the candidate's teacher or teachers in that subject.
5. A candidate who fails as a whole in either Section of Part I but who satisfies the examiners in course work in any subject will be credited with that course work and exempted from further examination in course work in that subject at a subsequent entry. A candidate who fails in Part II will be credited with course work only if the examiners are satisfied with his course work as a whole.
6. A candidate who has satisfied the examiners in course work in all the subjects he offered at any Part of a Special Internal B.Sc. (Eng.) Examination in Chemical Engineering will be credited with course work at the corresponding Part of the External Examination.
7. If a candidate retires or is absent from the written examination, any course work which has been sent in on his behalf by his Institution will be examined, and he may be credited as having satisfied the examiners in course work as though he had taken the whole of the written examination.
8. Special importance will be attached to technical facility in drawing, designing, field work, or other practical operations which cannot be tested in an examination by questions. Tutorial or Class Exercises are *not* considered as constituting course work.
9. Candidates who have been permitted by the Council for External Students to enter without attendance at a recognized Institution will be required to make a declaration that any practical work they submit is their own work.
10. An Institution has discretion to submit as part of a candidate's ordinary course work in any subject, cognate work done elsewhere in training for, or in the practice of, the Engineering profession. Such work must be certified both by the Institution and by the authority under whom it was carried out as being the candidate's own original work, and the course work as a whole must conform to the University's schedule of requirements for that particular subject.
11. An Institution may apply on behalf of any of its students at the time of application for approval of candidature for exemption from course work in any subject on the ground of exceptional professional experience and ability.
12. Specimen schedules of course work will be sent to recognized Institutions for the guidance of teachers.

EXAMINATION OF COURSE WORK AND PRACTICAL WORK

Instructions to Candidates

1. Each candidate for the B.Sc. (Eng.) Degree in Chemical Engineering is required to hand his course work to the authorities of the Institution

he is attending by a date of which he will be informed by the Institution but which will be about one month prior to the commencement of the relevant part of the examination.

2. Course work, other than drawings, should be submitted in loose-leaf files or bound notebooks, *a separate file or notebook being used for each subject.*

3. Each loose-leaf file or notebook, and each sheet of drawings, must bear the name of the candidate, and the full title of the subject. It must be paginated, and provided with an index. Each separate item of course work must bear the date at which it was completed. All drawings must be kept flat.

4. Course work will be returned to Institutions immediately after the examination, and any enquiries regarding the return of the course work must be made to the Institution.

5. A candidate who has been permitted by the Council for External Students to enter without attendance at a recognized Institution will be notified when to submit details of engineering experience and/or laboratory and drawing office work.

Instructions to Institutions

6. The authorities of each Institution must collect the course work from the candidates, see that each piece of course work bears the name and number of the candidate, and is stamped with an official stamp as a certification that the course work has been carried out at that Institution and by that candidate.

7. The candidates' work should be tied in bundles, each bundle consisting of a separate subject and the work arranged in order of the candidates' numbers. Drawings must be kept flat and the drawings of each candidate must be fastened together for each subject. Envelopes should not be used.

8. The whole of the course work, unless very bulky, should be sent in one container to the University by the prescribed date, of which each Institution will be informed, but which will be approximately a fortnight before the commencement of the written examination.

9. With each container of course work must be sent a detailed list of contents and under separate cover, for the whole, the Institution's estimate of the value of the course work of each candidate in each subject on a percentage basis. This estimate must be confidential to the Institution concerned and to the University.

10. The course work will be returned to the Institution immediately after the examination.

EXEMPTIONS

No exemptions are given from this examination in whole or in part except on the results of examinations of this University as follows :—

1. Candidates at Part I of the B.Sc. (Eng.) Examination in Chemical Engineering who have passed Part I of the B.Sc. (Eng.) Examination with any of the subjects :—Strength and Elasticity of Materials and Theory of Structures, Applied Heat and Mechanics of Fluids, Theory of Machines, Applied Electricity—will be exempted from examination in the subjects in which they have so passed.

2. Candidates who have passed the Intermediate Examination in Engineering under the old regulations with Engineering Drawing will be exempted from examination in this subject at Part I, but this does not apply to candidates who were exempt from Engineering Drawing at the Intermediate on some other qualification.

3. Candidates who have obtained the B.Sc. (Eng.) Degree with Mathematics at Part II will be exempted from the two papers in Mathematics at Part I of the B.Sc. (Eng.) Examination in Chemical Engineering.

4. Candidates who have obtained the B.Sc. Special Degree in Chemistry, and candidates who have obtained the B.Sc. General Degree with Chemistry as one of the subjects, may apply for exemption from Chemistry at Part I.

5. Candidates who have obtained the B.Sc. Special Degree in Mathematics or the B.Sc. General Degree with Pure and Applied Mathematics will be exempted from Mathematics, Paper I, at Part I of the Examination.

TIME TABLE

The examination will be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 3 August the External Registrar shall publish (a) a list of the candidates who have passed; (b) a list of the candidates who have obtained Honours, arranged by the examiners in two classes, and in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of Part II of the Final B.Sc. (Eng.) Examination in Chemical Engineering may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the External B.Sc. (Eng.) Examination in Chemical Engineering who have already passed Part I and who have completed more than half of the Part II Examination are eligible to apply for an Aegrotat Degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same Examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.Sc. (Engineering) in Chemical Engineering under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES**PART I****(1) Strength and Elasticity of Materials and Theory of Structures**

Stress and strain : tension, compression and shear. Complementary shear stress. Hooke's law. Young's Modulus. Modulus of rigidity. Poisson's ratio. Temperature stresses. Simple cases of resilience and suddenly applied loads. Composite bars. Elastic and plastic behaviour of common materials in tensile and compressive tests. Stress-strain curves. Simple testing machines. The measurement of strain.

Bending moments and shearing forces in cantilevers and simply supported beams under static loads. Theory of bending of beams : neutral axis ; distribution of normal stress due to bending ; moment of resistance. Second moment of area of sections. Curvature, slope and deflection of cantilevers and simply-supported beams. Composite beams. Determination of Young's Modulus from bending tests. Eccentric loading : tension or compression combined with bending.

Torsion of circular shafts : moment of resistance ; angle of twist ; shear stress. Transmission of power by shafts. Determination of Modulus of Rigidity. Stresses and deflections of close-coiled helical springs made from rods of circular section.

Simple strut theory. Critical loads for slender struts. Practical strut formulae. Thin cylinders under internal pressure. Stresses in thin rotating cylinders.

Simple cases of deflection of frames treated analytically and graphically. Stability of chimneys under wind pressure.

(2) Mechanics of Fluids

Bernoulli's theorem for incompressible flow. Introduction to the stream function : plotting of streamlines. Measurement of velocity of incompressible flow : Pitot and static pressure tubes, nozzles, orifices, notches and Venturi meter. Resistance of immersed bodies at constant velocity. Rayleigh's formula. Reynolds number : Froude number. Critical velocities for flow in pipes. Constant coefficient formulae for rough pipes. Loss of head due to bend, sudden enlargements and constrictions. Simple theory of flow in open channels. Impact and reaction of jets. General principles of the theory of reciprocating pumps, turbines and centrifugal pumps.

(3) Applied Heat

Thermodynamic functions and their relationships. The use of the thermodynamic diagrams (Temperature-Entropy and Mollier diagrams) for the representation of reversible cycles and the calculation of cycle efficiencies. Pressure-volume-temperature relationships of gases and vapours with special reference to dependent internal energy, entropy and enthalpy changes. The use of steam tables.

Steam power installations, including boilers, and auxiliary plant. The Rankine cycle. Steam accumulators, and steam for process work.

Internal combustion engine cycles and their application to gas, petrol and oil engines.

Elementary theory of air compressors, refrigerators and heat pumps.

Testing of engines ; efficiencies and heat balance.

(4) Theory of Machines and Physical Metallurgy*Theory of Machines*

Centre of rotation and instantaneous centre. Four link kinematic chain and simple derived mechanisms. Vector and other diagrams of displacement and velocity. Screws and screw threads. Belt, rope and chain drives. Simple and epicyclic gears. Cams. Friction gearing and clutches.

Piston displacement, velocity and acceleration in the reciprocating mechanisms. Diagrams of crank effort. Flywheels. Simple types of governors. Friction of unlubricated surfaces. Efficiency of machines. Brakes and dynamometers. Principles of dynamical balancing of rotating masses.

Physical Metallurgy

The structure of single crystals, polycrystalline metals and alloys. Crystallization and the simpler crystal forms. Allotropy. Solid solutions. Intermetallic compounds. Types of equilibrium diagram and their significance. Methods of constructing equilibrium diagrams ; microscopic examination, cooling curves, X-rays, electrical properties.

Heat treatment : precipitation hardening, quenching, tempering, annealing, normalizing, recrystallization, softening. Processes for producing a hard surface on steel.

Stress and strain, slip, plastic properties of single crystals and polycrystalline materials, work hardening, fatigue, corrosion fatigue, creep, rupture, hardness, brittleness, effect of temperature.

The properties of the more important commercial alloys, non-ferrous, and ferrous, including the commoner types of corrosion resisting, heat and creep resisting, and high tensile alloy steels.

(5) Applied Electricity

The basic principles of electrical engineering are required but not a detailed knowledge of design. The subject matter consists of the more advanced treatment of the syllabus of the Intermediate Examination in Electricity and Magnetism together with :—

Alternating currents ; wave form, mean and R.M.S. values, vector representation. Resistance, reactance and impedance. Calculation of simple series and parallel circuits with sinusoidally varying currents, resonance. Single and three-phase systems. Power factor control.

Alternators, general construction, simple aspects of rotor and stator windings ; behaviour when on load. Polyphase connections. Synchronous motor considered as an alternator with reversed power supply, use for power factor correction. Simple principles of the induction motor (wound, single cage and double cage rotor). Load characteristics, starting conditions. Starting and control gear.

Transformers ; construction and principles of action ; single and three-phase connections and Scott connection.

Direct current generators and motors ; construction, elementary principles of armature winding, starting and control gear. Conversion of alternating current to direct current, rotary converters, mercury arc and metallic rectifiers.

Elementary principles of the thermionic valve, cathode ray oscillograph and photoelectric cell.

Illumination ; standard sources and definitions, construction and principles of operation of the various types of electric lamps ; the spectral distribution of the light from the various types, and its influence on their practical use. Illumination requirements.

Principles and construction of moving-coil, rectifier, moving-iron and dynamometer instruments. Extension of instrument range by multipliers, shunts and instrument transformers.

(Note.—It is the intention of the University gradually to introduce the rationalised M.K.S. system of units for Calculations in Electrical Engineering.)

(6) Inorganic Chemistry

General properties of the elements and their compounds treated systematically according to the periodic classification and, in more detail, with regard to their application in manufacturing processes and plant.

(7) Physical Chemistry

Matter and energy ; forms of energy and their transformations. First and second laws of thermodynamics in their application to physico-chemical problems, reversible processes, thermodynamic scale of temperature ; entropy, enthalpy, free energy.

Gases : equations of state ; kinetic theory—mean free path, molecular diameter ; Avogadro's Number. Liquids and liquid-vapour equilibrium ; vapour pressure of liquids ; critical point, critical constants ; Joule-Kelvin effect ; liquefaction of gases. Low temperature and vacuum technique. Solids ; crystalline state, crystal structure ; vitreous state. Change of physical state in general ; Clausius-Clapeyron Equation ; pT diagram for a one-component system.

Solutions ; definitions, partial molar quantities, molar chemical potential. Ideal gas mixtures, partial pressures, Dalton's law. Liquid solutions ; ideal systems, Raoult's law ; real solutions, deviations. Solid solutions. Activity, activity coefficient. Dilute solutions of non-volatile solutes ; vapour pressure, boiling point, freezing point. Equilibrium between phases : general distribution law, partition coefficient. General phase theory ; equilibrium in two- and three-component systems ; applications to industrial processes—fractional distillation, crystallization, etc.

Heat of reaction, law of constant heat summation ; heat of formation. Law of mass action, equilibrium constant. Examples of equilibria in homogeneous reaction in gaseous and liquid systems, and in heterogeneous reactions ; association and dissociation. Chemical affinity and heat of reaction ; reaction isochore and isobar, and their integration. Third law of thermodynamics, absolute entropies. Determination of affinities and equilibrium constants at specified temperatures from electrochemical equilibrium and thermal data. Electronic and electrolytic conduction ; Faraday's laws of electrolysis. Properties of electrolytes ; dissociation theory, ions in solids, liquid and dissolved salts. Transport numbers ; strong and weak electrolytes. Voltaic cells ; energy relations ; reversibility, polarization. Single electrode potentials, electro-chemical series ; solution junction potentials ; concentration cells ; oxidation-reduction potentials. The hydrogen electrode, pH value, buffer solution, indicators, control of pH in industrial processes. Electrometric titration ; examples of various types. Primary and secondary cells. Electrolysis ; decomposition voltage ; electrode reactions, polarization, overpotential. Polarography ; electroanalysis. Technical electrolysis, application of general principles ; electroplating and electroforming. Principles of the electrolytic extraction and refining of metals.

Viscosity and flow properties of materials. Surface tension, angle of contact, wetting ; technical applications—detergency, flotation. Adsorption on solid and liquid surfaces ; technique and interpretation of

measurements. Monomolecular films. Disperse systems ; suspensions, emulsions, foams ; colloidal systems ; electrokinetics.

Determination of the "order" of a chemical reaction, consecutive reactions ; activation energy ; theory of unimolecular reactions. Catalysis ; in homogeneous gas reactions, in solutions ; selective catalysis and catalyst poisons ; promoters. Theory of chain reactions as applied to oxidation and polymerization reactions ; phenomena associated with gaseous explosions. Activation in photo-chemical reactions, photochemical chain reactions. Activation in heterogeneous reactions.

(8) Organic Chemistry

The principles of organic chemistry with particular reference to general synthetic methods and the conditions under which reactions take place. The general chemical behaviour of the chief classes of aliphatic and aromatic compounds, and of a few of the more important heterocyclic compounds (pyridine quinoline, etc.). Basic processes such as sulphonation, nitration, reduction, diazotization, acetylation, saponification, hydrogenation and their significance in modern industry. The chemistry of substances of industrial importance such as petroleum and its derivatives, plastics, oils, fats, soaps, carbohydrates, cellulose and its derivatives, coal-tar products, and the chief classes of dyestuffs and intermediates.

Practical Examination in Chemistry

Candidates may use in the practical examination any book or books they wish.

The following apparatus for Semi-Micro Qualitative Analysis will be provided at the University Laboratories in South Kensington for any candidate who wishes to use this method of analysis in practical examinations, together with a sufficient range of spot reagents. Candidates are not permitted to bring into the practical examination any other semi-micro apparatus or reagents :—

Centrifuge ; centrifuge tubes ; water bath with cover pierced to take centrifuge tubes ; two long dropping pipettes ; micro burners ; wash bottles 100 cc. polythene squeezing type ; crucibles 25 mm. and 15 mm. ; spotting tiles (porcelain) and microscope slides ; assorted tubes 2 in. by 1 in., 2 in. by $\frac{1}{2}$ in., 1 in. by $\frac{5}{8}$ in., and block to hold these and centrifuge tubes ; rack for dropping pipettes ; long thin spatula ; Whatman papers (No. 120), 2 in. squares ; small porcelain dish ; forceps and tube holders ; anti-bumping tubes to fit in centrifuge tubes ; small conical flask, 10 ml. ; pyrex tube fitted for testing evolved gases ; reagents ; strong acids in Jena T.K. bottles, other common reagents in bottles fitted with dropping pipettes.

(9) Mathematics I

Differentiation and integration of algebraic, trigonometric, exponential, logarithmic and hyperbolic functions.

Maxima and minima of functions of a single independent variable.

Tangents, normals and curvature of plane curves ; geometrical properties of well-known curves.

Technique of integration, including change of variable, use of identities and partial fractions, and integration by parts.

Definite integrals, including applications to arcs, areas, volumes, first and second moments ; graphical and numerical methods of approximate integration.

Approximate solution of equations by graphical and numerical methods.

Complex numbers and Demoivre's theorem.

Taylor's and Maclaurin's series, and other methods of expansion use of series for approximation.

Partial differentiation, including maxima and minima of functions of several independent variables ; change of independent variables ; applications to thermodynamics.

Plane statics, including frameworks, bending moment and shearing force and the relations between these and load.

Dynamics of a particle in one and two dimensions under variable forces. Resisted motion and damped oscillations. Work, energy, momentum, motion of a rigid body about a fixed axis.

Hydrostatics, including total thrust and centre of pressure on submerged surfaces.

(10) Mathematics II

Fourier series and numerical harmonic analysis.

Differential equations, including first and second order equations integrable by quadratures ; linear differential equations with constant coefficients, equations reducible to these, and simultaneous linear differential equations with constant coefficients ; simple partial differential equations, including solution by separation of variables.

Elements of probability ; elementary statistics, including frequency distribution, mean deviation and standard deviation, correlation, and an introduction to least squares and curve fitting.

Questions may be set involving applications to such topics as the bending of beams, struts and ties, conduction of heat, fluid flow.

(11) Engineering Drawing

Practical construction of conics, loci, and other common curves. Geometry of solids, and the orthographic projection of lines and solids. Intersections and developments. Construction of auxiliary projections.

Fundamental principles of engineering drawing, with special reference to the British Standard Specification for Drawing Office Practice.

Drawing, sketching and dimensioning engineering details and machine parts.

A knowledge of engineering fastenings, couplings, pulleys, bearings, simple valves, pipe fittings, and other simple engineering components, and the materials used in their construction.

The meaning of limits and fits.

Pictorial projections.

Determination of centroids and second moments of area. Graphical differentiation and integration.

PART II

(1 & 2) Unit Chemical Engineering Operations and Processes

The underlying theories of the unit operations of size reduction separation, evaporation, distillation, crystallization, leaching and extracting, humidification, drying, mixing, absorption and adsorption treated from the point of view of the fundamental physical and physico-chemical laws upon which they are based. The design, construction

and operation of the principal types of plant used in such operations. Instrumentation in plant control. The theory and practice of selected basic processes in chemical industry such as roasting and calcining, electrolysis, oxidation and reduction, nitration, halogenation, alkylation and sulphonation, hydrolysis, polymerization and fermentation.

The preparation of quantitative flow of sheets of materials, energy and time and their use in plant design.

(3) Transport and Storage of Materials and Heat Transmission

Transport and Storage of Materials

The principles of mechanical handling and the plant used for the conveyance of solids, semi-fluids, liquids and gases. Design of bins, hoppers and storage tanks. The chemical engineering aspects of problems relating to the flow of fluids. The economic design of pipe lines and the calculations of power requirements. Design and operation of pumps, blowers and elevators.

Heat Transmission

Mechanism of heat transfer by conduction, radiation and convection. Condensation of vapours : effect of non-condensable gas. Radiation from surfaces and flames. Effect of nature of materials and boundary films of liquids and gases on heat transmission and their relation to fluid friction. Design of heat exchangers, recuperators, condensers, tube banks, coils and jacketed pans. Heat conservation and insulation. Heat exchange through packed solids. Induction, eddy current, dielectric and infra-red heating.

The inter-relationships between heat transfer, fluid friction and mass transfer by diffusion.

(4) Fuel, Combustion and Power Generation and Distribution

Fuel and Combustion

General principles and thermodynamics of combustion processes. Secondary combustion. Air requirements. Flue gas calculation.

Solid, liquid and gaseous fuels, general properties, relative importance and fields of utility of each.

Classification of coals, their examination, origin and distribution. Characteristics required for steam raising, domestic heating, gas making and metallurgical coke. Ash and clinker formation. Methods employed in coal carbonization at temperatures between 500 and 1,300°C. Recovery of by-products.

Gas producers. Complete gasification of solid fuels by means of an air or air-steam blast. Design and construction of producer and water-gas plant. Cooling and cleaning of gas for power purposes. Water gas as a raw material for the production of liquid fuels. Hydrogenation of coal.

Brief description of the distribution and refining of petroleum and shale oil, and the industrial application of the products obtained. Physical and chemical testing of oils.

Methods of burning fuels.

Fuel calorimetry ; technical pyrometry.

Power Generation and Distribution

Steam production and distribution. Modern boiler plant design and equipment. Determination of efficiency of boiler installations and steam operated plant. Lay-out and erection of pipe lines ; traps and fittings.

Industrial fuel burning equipment and elementary furnace design. Economic power production. Power as a by-product. The problem of fluctuating demand.

Conditioning of water for boilers and industrial processes.

(5) Materials of Construction, Plant Design, Organization and Layout of Works

Materials of Construction

The uses of materials of construction : metals, alloys and non-metals, with special reference to corrosion, fabrication, and properties at elevated temperatures. Effect of fabrication and operating conditions on the physical and chemical behaviour of metals and alloys.

Iron and steel. Alloy steels and irons, particularly heat resistant and corrosion resistant types : high silicon iron.

Lead, copper, tin, zinc, nickel, silver, aluminium and their more important alloys.

Timber, rubber, plastics, jointing materials, refractories, chemical stoneware, enamels, cement and concrete.

The chemical principles underlying corrosion in the presence of liquids and by direct attack. Methods of reducing corrosion. Protective coatings.

Plant Design and Construction

The design and fabrication of low, medium and high pressure equipment required in chemical industry. Design of selected plant for unit processes such as stills and condensers, as well as auxiliary plant for the supply and removal of liquors, heating media, etc. Foundations, floor loads and general principles of reinforced concrete construction.

Costs of fabrication due to plant, materials and labour.

Interest, depreciation and overheads. Essentials of good design ; economic efficiency, ease of control, facilities for repairs and low capital cost. Specifications and contracts ; commercial, legal and general clauses. Brief outline of the principles of estimating cost of plant.

Organization of Production

Economic structure of industry. Public utility services. Cartels and trade associations. Banking and credit systems. Price level.

Formulation and development of chemical engineering projects. Planning and design of factories. Negotiations with public utility bodies and local authorities.

General acquaintance with the main Acts of Parliament and Government Orders and Regulations which affect the chemical engineer in the design, erection and operation of plant and factories. Common law (trespass, nuisance, negligence). Factory and Workshop Act (safety, health and welfare of workers in factories). Public Health Act (offensive trades). The Alkali, etc., Works Regulation Act (emission of noxious fumes and disposal of effluents and wastes). Patents and Designs Acts. Forms of contract and contractual liability.

Factory administration. Production planning. Stores organization. Labour management (including general principles of industrial psychology). Methods of remuneration. Health and medical services.

Site Surveying and Setting out of Works

Use of simple surveying instruments. Determination of quantities of excavation and filling. Use of ordnance sheets and allied problems.

**MASTER OF SCIENCE (ENGINEERING), DOCTOR
OF PHILOSOPHY, AND DOCTOR OF SCIENCE
(ENGINEERING).**

Candidates who have obtained the B.Sc. (Eng.) Degree in Chemical Engineering will be permitted to proceed to the M.Sc. (Eng.), Ph.D. and D.Sc. (Eng.) Degrees in accordance with the Regulations in Engineering for External Students, which may be obtained on application to the External Registrar.

**COLLEGES AND INSTITUTIONS RECOGNIZED FOR
THE PURPOSE OF THE B.Sc. (ENG.) DEGREE
IN CHEMICAL ENGINEERING**

1. Recognized for both the Internal and External Degrees :—

University College.
Imperial College—City & Guilds College.
Battersea Polytechnic.
West Ham College of Technology.

2. Recognized for External Degree only :—

Birmingham College of Technology.
Bradford Technical College.
Loughborough College of Technology.

UNIVERSITY OF LONDON



REGULATIONS

FOR DEGREES

IN

MINING

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Revised Regulations for the B.Sc. (Eng.) Examination in Mining were introduced in 1952 and are set out on pp. 2003 *et seq.*

Candidates already registered for the degree under the Old Regulations will be permitted to complete their examinations as follows :—

(i) Candidates referred in a subject of Part I under the Old Regulations will be permitted, in 1954 and 1955, to take as their referred subject the corresponding subject or subjects under the Revised Regulations as follows :—

<i>Referred Subject</i>	<i>Completing Subject or Subjects</i>
(1) Power Generation and Transmission	(6) Power Generation (Part II)
(2) Electrical Technology	(4) Applied Electricity (Part I)
(3) Materials and Structures	(7) Materials and Structures (Part II)
(4) Surveying, Surface and Under-ground	(10) Topographical Surveying (Part II) and (17) Mine Surveying (Part III)
(5) Mining Machinery	(12) Mining Machinery (Part III)

(ii) Candidates who have passed or completed Part I under the Old Regulations will be permitted, in 1954 and 1955, to complete their examination for the degree by passing in the following subjects under the Revised Regulations :—

Part II : (9) Principles of Mining I, (11) Mining Geology

Part III : (14) Mineral Dressing, (15) Mining Economics,
(16) Principles of Mining II

and in course work in Assaying or Coal and Coal Utilization as required under the Old Regulations.

These subjects take the place of those formerly set for Part II under the Old Regulations, and candidates must satisfy the examiners in all these subjects on one and the same occasion. The regulations regarding registration, approval of candidature, entry, etc., are as for Part III under the Revised Regulations.

(iii) In and after 1956 candidates will be required to take all their examinations in accordance with the Revised Regulations.

B.Sc. (ENGINEERING) EXAMINATION IN MINING

1. Candidates for the Degree of Bachelor of Science (Engineering) in Mining as External Students are required to satisfy the minimum University and Faculty entrance requirements ; to have been registered as External Students for the Degree ; to have obtained the necessary qualifications for admission to the Final Examination and to pass Part I, Part II and Part III of the Final Examination.

2. The standard of the Final Examination is that which would normally be required of a whole-time student after a course of study extending over three academic years, Part I of the examination being taken one year, Part II of the examination being taken two years, and Part III of the examination being taken three years after completion of the Intermediate Examination in Science or an accepted equivalent.

3. Successful candidates will be awarded First or Second Class Honours or a Pass Degree.

4. Candidates who have obtained the B.Sc. Degree, whether Pass or Honours, in the Faculty of Engineering, are not permitted, in any circumstances, to re-enter for the examination in the same branch. They may, however, enter for the examination in any other branch.

FACULTY REQUIREMENTS

A candidate who has satisfied the minimum University entrance requirements by means of a General Certificate of Education will be required to have passed in Mathematics at Ordinary or Advanced Level.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to Part I of the Examination, each candidate must :—

(a) have satisfied the minimum University and Faculty entrance requirements and have been registered as an External Student preparing for the degree of B.Sc. (Eng.) in Mining ;

(b) (i) have passed the Intermediate Examination in Science in Pure Mathematics, Applied Mathematics (or in Mathematics, Pure and Applied), Physics and Chemistry ;

or (ii) have passed at main subject standard at a Higher School Certificate Examination or Examinations recognized by the Ministry of Education as an approved second examination in Secondary Schools in Pure Mathematics, Applied Mathematics, (or in Mathematics, Pure and Applied), Physics and Chemistry ;

or (iii) have passed at main subject standard at a Higher School Certificate Examination or Examinations recognized by the Ministry of Education as an approved second examination in Secondary Schools in three of the subjects Pure Mathematics, Applied Mathematics, Physics, Chemistry and at subsidiary standard in the fourth.

(A candidate who has obtained a Higher School Certificate with passes at main subject standard in one or more of the subjects required will be permitted to complete his qualification by passing in the remaining subject, or subjects, at the Intermediate Examination in Science. The regulations for this examination should be consulted.)

(A candidate who has not qualified for the award of a Higher School Certificate but who has been permitted to count successes gained in 1949 or 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum entrance requirements of the University will be permitted to count either or both of these as part of his qualifications for admission to the degree.)

or (iv) have passed at the Advanced Level in an examination or examinations for the General Certificate of Education awarded by one of the approved University Examining Bodies in the subjects corresponding to Mathematics, Physics and Chemistry at the Intermediate Examination in Science.

(A candidate who has passed at the Advanced Level in the General Certificate of Education Examination or Examinations in one or more of the subjects required, will be permitted to complete his qualification by passing in the remaining subject or subjects at the Intermediate Examination in Science. The regulations for this examination should be consulted.)

or (v) have passed the Intermediate Examination in Engineering of this University. (A candidate who was referred in Engineering Drawing at this examination will also be admitted to Part I of the B.Sc. (Eng.) Examination in Mining) ;

or (vi) have obtained the Engineering Cadetship *Diploma* of the Ministry of Education ;

(c) have attended a prescribed course of study at an Institution recognized for the purpose by the University, except as provided in para. 5 below ;

(d) have obtained approval of candidature for the examination.

2. Candidates who are required to pass in one subject at the Intermediate Examination in Science in order to complete qualification 1 (b) above may apply for approval of candidature for Part I and may in exceptional circumstances and on special application be permitted to enter for the examination concurrently with the Intermediate Examination in Science in the remaining qualifying subject, but in the event of failure in the Intermediate subject no report will be made on their performance at Part I.

3. To be admitted to Part II, each candidate must (a) have passed Part I, or have been referred in one subject at that examination, (b) have attended a course of study at an Institution recognized for the purpose by the University (except as provided for below) and (c) have obtained approval of candidature for the examination.

4. To be admitted to Part III, each candidate must (a) have been registered as an External Student preparing for the Degree of B.Sc. (Eng.) in Mining at least three academic years previously, (b) have passed Part I and Part II, or have been referred in one subject at either examination, (c) have attended a course of study at an Institution recognized for the purpose by the University (except as provided for below) and (d) have obtained approval of candidature for the examination.

5. A candidate who is not in attendance at a recognized Institution may apply for admission to the examination if he produces evidence satisfactory to the Council for External Students that his previous training and/or practical experience has been adequate. Such candidates must *either*

(a) be at least 25 years of age and have had at least 5 years' satisfactory practical mining experience (excluding apprenticeship or similar training period) ; *or*

(b) have passed approved examinations required for a degree in mining in another University in the British Commonwealth and approved by the Council for External Students, or hold a corresponding approved qualification granted in a foreign country.

Each application for admission to the examination under this regulation must be made on the appropriate form and must be accompanied by a fee of £1 1s., which is in no case returnable. The applicant may be required to submit records of laboratory and drawing office work which he has carried out before his application is accepted (*see also* page 2007, para 5).

6. A concession granted under paragraph 5 above will be valid for four years, but application may be made by the candidate for its renewal.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the first Thursday after 3 June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the three Parts of the examination during the first term of their course of study for Part I, and not later than 30 January of the year in which this examination is taken. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 30 January, application may be accepted after this date on payment of the late fee of £1 1s. which is not returnable, but no application will be accepted after 20 February in the year of the examination.

ENTRY TO EXAMINATION

The candidate lists will be opened on 8 February. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 13 March and the candidate list will be closed on 20 March. No entry can be accepted after the candidate list has been closed.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Part I	4	4
Part II	4	4
Part III	4	4
Re-examination in referred subject at Part I or Part II (including candidates taking Topographical Surveying with Mine Surveying after being referred in Surveying under Old Regulations)	2	2
Candidates taking selected papers to complete degree after passing Part I Old Regulations	8	8

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off

against the entry fee at the time of entry for a Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. Candidates taking the oral-practical examination will be required to pay an additional fee of £3 3s. for Part I and £4 4s. each for Parts II and III.

3. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

4. A candidate who withdraws from the examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

1. The Final Examination is divided into three Parts, and except in the case of referred candidates and candidates taking selected papers to complete the degree after passing Part I (Old Regulations), Part I must be completed before entry for Part II, and Part II must be completed before entry to Part III. The subjects shall be as follows :—

Part I

- (1) **Applied Mathematics** (one 3-hour paper).
- (2) **Applied Mechanics** (one 3-hour paper and an examination of candidates' course work).
- (3) **Engineering Drawing and Design** (one 2-hour paper and an examination of candidates' course work).
- (4) **Applied Electricity** (one 3-hour paper and an examination of candidates' course work).
- (5) **Geology** (one 3-hour paper and one practical examination of 6 hours).

Part II

- (6) **Power Generation** (one 3-hour paper and an examination of candidates' course work).
- (7) **Materials and Structures** (one 3-hour paper and an examination of candidates' course work).
- (8) **Electrical Engineering** (one 3-hour paper and an examination of candidates' course work).
- (9) **Principles of Mining I** (one 3-hour paper).
- (10) **Topographical Surveying** (one 3-hour paper and an examination of candidates' course work).
- (11) **Mining Geology** (one 3-hour paper).

Part III

- (12) **Mining Machinery** (one 3-hour paper and an examination of candidates' course work).

- (13) **Assaying or Testing and Utilization of Fuels** (one 3-hour paper and one 8-hour practical).
 - (14) **Mineral Dressing Section I and either Section II or Section III** (one 3-hour paper and an examination of candidates' course work).
 - (15) **Mining Economics** (one 3-hour paper).
 - (16) **Principles of Mining II** (one 3-hour paper and an examination of candidates' course work).
 - (17) **Mine Surveying** (one 3-hour paper and an examination of candidates' course work).
2. In subjects requiring a practical examination no candidate will be allowed to pass unless he satisfies the examiners both in the practical and written parts of the examination.
 3. Candidates taking the subject Assaying must take Mineral Dressing Sections I and III. Candidates taking Testing and Utilization of Fuels must take Mineral Dressing Sections I and II.
 4. At the practical examinations candidates are required to bring their laboratory note-books for inspection by the examiners and may use these and any other book or books they wish for reference. Any such books or note-books must be removed at the close of the examination.
 5. A candidate who has not attended a recognized Institution but who has been registered under clause 5 of the "Qualifications for Admission" will be required (a) to submit details of practical work which he has done, whether in an educational institution or in the course of his professional career. These should, wherever possible, be supported by actual records adequately vouched for as the personal work of the candidate; (b) to pass an oral-practical examination in London which may include tests in a laboratory at the discretion of the examiners (this examination shall not exceed six hours in duration) and (c) to pay an additional fee of £3 3s. for Part I and £4 4s. each for Parts II and III of the examination.
 6. All answers to examination questions shall be written in English unless instructions are given to the contrary.
 7. The marks obtained in the three Parts of the examination (or, in the case of Old Regulations candidates, the two Parts) will be combined for the purpose of classification of Honours.
 8. The examiners shall be at liberty to test any candidate by means of an oral examination.

EXEMPTIONS

Candidates who have passed the Intermediate Examination in Engineering (Mining) of this University under the Old Regulations will be exempt from examination in Engineering Drawing at Part I, but this does not apply to candidates who were exempt in Engineering Drawing at the Intermediate on some other qualification.

REFERENCE

1. A candidate for Part I or Part II of the examination who fails to reach the minimum standard in one subject may be referred, i.e., he may be permitted, on the recommendation of the examiners, to present himself in that subject either alone or with the next following Part.
2. A candidate may take a referred Part I subject concurrently with Part II and if he passes in Part II will be credited with that Part and be allowed to proceed to Part III even although he may have failed in the referred subject. Similarly, a referred Part II subject may be taken

concurrently with Part III but a candidate who passes in Part III but fails in a referred subject from Part I or Part II will not be awarded the Degree until the referred subject has been passed.

3. A candidate referred at Part I who enters for Part II without passing or having passed in his referred subject will not be allowed additional reference in any Part II subject.

4. Candidates who take a referred Part I subject concurrently with the examination equivalent to Part II under the Old Regulations and fail in the referred subject will receive no report on Part II.

5. The examiners will recommend that the candidate be referred only if his failure in the subject is not serious, and if his performance in the remaining subjects is reasonably good.

COURSE WORK AND PRACTICAL WORK

1. Except in the case of a candidate who is permitted to take the oral-practical examination, course work in all subjects where it is specified is an essential part of the examination, and a candidate cannot pass the examination unless his course work satisfies the examiners.

2. The course work submitted in any subject must be carried out at a duly recognized institution and be certified by the candidate's teacher or teachers in that subject.

3. Each candidate will be required to submit his course work for inspection on each and every occasion on which he presents himself for examination, and on each occasion only such course work as is submitted will be considered by the examiners.

4. The course work to be submitted is the student's record of experiments, field work, calculations and drawings made during the student's course of study.

5. The course work in Principles of Mining will consist of a diary together with descriptive notes and sketches made from practical work underground for a total period of not less than 4 months. The diary must be kept by the candidate and show the actual time spent at the mine, should state briefly the manner in which he has been employed and must be certified by the manager or some other responsible official of the mine.

6. Candidates will receive instructions regarding submission of course work and laboratory note-books at the time of entry to the examination.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 3 August the External Registrar shall publish (a) a list of the candidates who have passed, (b) a list of the candidates who have obtained Honours, arranged by the examiners in two classes, and in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final B.Sc. (Engineering) Examination in Mining (Part III) may

apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the External B.Sc. (Engineering) Examination in Mining who have already passed Parts I and II and who have completed more than half of the Part III Examination are eligible to apply for an Aegrotat Degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

[*Note.*—Candidates completing examinations for the award of a degree under the Old Regulations may apply for the award of an Aegrotat Degree if they have passed Part I and completed more than half of Part II.]

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.Sc. (Engineering) in Mining under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES

(Revised Scheme)

PART I

(1) Applied Mathematics

Algebra.—Indices. Arithmetical and geometrical Series. Binomial series with application to approximations. Exponential series. Common logarithms and Napierian logarithms. Use of graphs in representation of functions, solution of equations, and determination of laws connecting variables.

Co-ordinate Geometry.—Use of rectangular axes and co-ordinates. Straight line and circle. Simple properties of parabola, ellipse and hyperbola.

Applied Geometry.—Scales and proportionals. Tangents. The ellipse, parabola and hyperbola. Cycloids Involutives. Simple problems on loci. Orthographic, isometric and oblique projections of solids.

Trigonometry.—Solution of triangles. Representation of vector quantities ; addition and subtraction of vector quantities. Functions of sum and difference of two angles ; half angle formulae ; simple trigonometrical equations. Complex numbers. Demoivre's Theorem. Exponential values of the sine and cosine. Summation of simple trigonometrical series.

Differentiation and Integration.—Meaning of differential coefficient. Differentiation of simple functions, products and quotients of two functions, function of a function. Maxima and minima. Curvature.

Integration as the inverse of differentiation ; simple standard integrals. Integration as summation. Graphical methods of integration. Simpson's rule.

Application to evaluation of plane areas, surfaces and volumes of revolution, moments of inertia, mean values and root mean square values. Solution of easy differential equations arising from practical problems.

(2) Applied Mechanics

Hydraulics.—Relevant physical properties of fluids. Modes of motion of a fluid ; critical velocity ; velocity head ; pressure head. Bernoulli's theorem. Fluid friction. Losses in pipe flow. Flow in open channels. Methods of measuring the rate of flow of fluids ; relation between pressure drop and rate of flow. Standard orifices. Flow over weirs and notches. Use of models in studying flow ; principle of dynamical similarity ; corresponding speeds. Impact of jets. Water wheels and turbines.

Applied Heat.—First law of thermodynamics. Joule's equivalent. Properties of a perfect gas. The laws of Boyle, Charles and Joule. The characteristic equation and the universal gas constant. The general energy equation. The specific heats and the internal energy of a perfect gas. Work done on or by a gas during volume changes. The indicator diagram. Adiabatic and isothermal expansion and compression. Carnot's principle. The Carnot cycle and other reversible cycles. The entropy of a perfect gas. Internal combustion engine and gas turbine cycles. The properties of steam and the use of steam tables. The temperature-entropy diagram for water and steam. The Rankine cycle and the use of the Mollier diagram. The simple reciprocating steam engine. The hypothetical indicator diagram, mean effective pressure and indicated power. Brake horse-power and mechanical efficiency. Adiabatic heat drop, Rankine efficiency and efficiency ratio. Chemical and physical properties of solid, liquid and gaseous fuels. Chemistry of combustion. Calorific value of fuels.

Testing of Engines.—Brake horse-power ; indicators for high-speed and low-speed engines ; indicated horse-power. Thermal, mechanical, and relative efficiencies. Heat balance.

(3) Engineering Drawing and Design

[*Note.*—A preliminary course in practical plane and solid geometry, including orthographic, oblique and isometric projection, curves of interpenetration between solids and development of surfaces and solids, should be taken before the following work is begun.]

The function of the rough sketch. Preparation of the scale drawings, with sections, dimensions, tolerances and specifications regarding the materials to be used. Tracing, and reproduction of the scale drawings in quantity as prints direct from the tracing. Other methods of reproduction of the drawings. Drawing office routine, and practice as outlined in B.S.308.

The strength and proportion of such standard details as screw threads, nuts, bolts, keys, cotters, shafting, and pipe connections.

The design of simple riveted joints, couplings, pipe lines, ties, struts, boiler stays, beams.

Metal fits and tolerances.

For course work the student should make rough sketches and take dimensions of simple details of machinery, make complete working drawings in pencil from the sketches, trace the drawing and produce photographic prints.

The examples should be chosen from details of engines, boilers, valves, machine tools, hydraulic and mining machinery.

Course work in Engineering Drawing, when submitted to the examiners, should include that done during the course in practical geometry.

(4) Applied Electricity

Principles of Electrostatics.—Induced charges, field strength, potential gradient, capacitance, stored energy. Electrostatic and practical units.

Principles of Electromagnetism.—Magnetic field strength due to simple coils and conductor arrangements. Force on current-carrying conductors and coils in a magnetic field. Electromagnetic induction of e.m.f., self and mutual inductance. Stored energy. Electromagnetic units.

The Electric Circuit.—Resistivity, resistance temperature coefficient. Kirchhoff's rules. Calculation of currents and p.d.'s in simple d.c. networks. Growth and decay of current in inductive and capacitive circuits. Alternating voltages and currents, mean and r.m.s. values, form factor. Calculation of series and parallel circuits containing resistance, inductance and capacitance. Resonance in series and parallel circuits. Power and power factor in single-phase circuits. Power factor improvement by condensers. Three-phase connections; voltage and current relations, phase sequence. Measurement of power in three-phase circuits.

The Magnetic Circuit.—B-H curve and hysteresis loop, variation with composition of the magnetic material. Remanent magnetism. Measurement of flux by ballistic galvanometer and flux meter. Total iron losses and their variation with frequency and flux density. Calculation of ampere turns for composite magnetic circuit. Tractive force of a magnet.

Electrical Machines.—E.m.f. generated in an armature coil and in a group of coils; distribution factor. Simple a.c. and d.c. armature windings. E.m.f. and torque equations. M.m.f. and reactance of armature windings. Losses. Elementary principles of simple types of d.c. and a.c. machines and transformers.

Electronics.—Mechanism of electronic emission. The diode-characteristics and uses as a rectifier. The simple cathode-ray-tube—voltage and current sensitivity. The triode-characteristics and use as simple amplifier.

Measuring Instruments.—Simple details of construction and action of the principal types of ammeters, voltmeters and wattmeters.

Illumination.—Units and definitions. Simple calculations of illumination from given sources. Filament and gas-discharge lamps.

(Note.—It is the intention of the University gradually to introduce the rationalised M.K.S. System of units for Calculations in Electrical Engineering.)

(5) Geology

Physical Geology.—The nature, origin, and distribution of the greater surface features of the earth's crust. Weathering, erosion, and denudation. Action of surface and underground waters, of ice, and of wind. The ocean ; its movements and work. Internal processes and their effects ; earth movements, mountain building, subsidence and elevation, earthquakes, and volcanic activity. Features produced by denudation (outcrop, escarpments, outliers, inliers, unconformity).

Structural Geology.—Rock deformation ; fractures, folds, joints, faults, cleavage, strike and dip. Mode of occurrence of igneous intrusions and extrusive rocks.

Crystallography.—The recognition, classification, and representation of the chief crystal-forms assumed by minerals ; the use of crystal-form in identification.

Mineralogy and Petrology.—The physical and chemical properties of the common rock-forming minerals ; their classification, association, and modes of occurrence. The nature, composition, and classification of igneous, sedimentary and metamorphic rocks.

Elementary Stratigraphy and Palaeontology.—The principles on which the stratigraphical classification of rock-masses depend ; the use of fossil remains in determining the age of rocks ; nature and relations of the principal fossils characteristic of the successive Geological Periods. Classification and time-range of the chief fossil groups.

Economic Mineralogy.—The principal minerals of economic importance ; their physical and chemical properties ; their determination (by blowpipe and other means) and uses.

Practical Examination

Reading and drawing of crystals. Description and identification of common rock-forming minerals, and of the principal varieties of rocks in hand specimens and in thin-sections under the microscope. Identification of common fossils and recognition of their stratigraphical horizon. Interpretation of simple geological maps by description, and the drawing of sections. Identification of economic minerals in hand specimens and by blowpipe analysis.

Candidates are required to bring to the practical examination their *original* laboratory note-books for inspection by the examiners. Evidence of having taken part in geological field excursions must be submitted.

PART II

(6) Power Generation

Main sources of energy and their relative importance.

Fuels.—Solid, liquid and gaseous fuels ; general physical and chemical properties, calorific value, sampling, testing and storage.

Steam Power.—Standard types of fire-tube and water-tube boilers. Combustion of solid fuels on grates, hand-stoking, mechanical stokers, natural and mechanical draught, water walls and radiant and convective heating surfaces, air heaters and economizers, superheaters, natural and forced circulation, the Benson, Loeffler and Velox boilers, auxiliaries and feed water treatment, boiler trials and preparation of heat balance account. Simple compound and uniflow steam engines, the de Laval turbine and velocity and pressure compounded impulse turbines, the Parsons turbine, regenerative and reheat cycles, basic efficiencies and thermal efficiencies, high-level and low-level jet condensers, surface condensers, thermal storage and utilization of exhaust steam, cooling towers.

Gas Power.—Blast furnace, coke oven and producer gas. Gas producers for different types of fuels, types of gas engines used in mining, ignition systems, starting and governing the constant-pressure gas turbine.

Oil Power.—The Diesel engine, air-blast and solid injection types, fuel pumps and atomizers, cooling arrangements and fuel storage systems, starting arrangements and governing systems.

Water Power.—High, medium and low head schemes. Flumes and penstock pipes, impulse and reaction turbines, specific speed and choice of turbines, governing of hydraulic turbines. Surge tanks.

General.—Economics of power generation, capital and operating costs, load and diversity factors, depreciation and amortization of power plants.

[*Note.*—The above syllabus is treated from the practical aspect, mainly from the operational standpoint and the work should be supplemented by actual tests on power plants in a heat-engines laboratory. The necessary thermodynamics and hydraulics are covered by the Applied Mechanics syllabus in Part I.]

(7) Materials and Structures

Materials.—General considerations regarding working stress. Elastic limit. Dead-load and live-load stresses. Effect of repeated stress and alternating stress. Factor of safety. Specifications and tests of materials used in structural engineering. Limitation of weights and dimensions of members by transport and handling facilities. Quantities and costs.

Framed structures.—Force analysis for roof trusses, head frames, bridges, trestles. Counterbracing in frames. Singly Redundant frames. Deformation of framed structures.

Design of tension members.—

Design of compression members.—Elementary theory. Practical formulae for columns and struts. Effect of eccentric loading.

Beams.—Relation between load-intensity, shearing force, bending moment ; slope, and deflection along a beam.

Continuous beams on non-yielding and on yielding supports. Reduction to an equivalent system of simple beams.

Beam sections ; moment of resistance and section modulus. Use of Steel Makers' Handbooks.

Plate girders and built-up beams.

Members carrying direct and bending stresses.

Riveted connexions.—Practical detailing and grouping of rivets. Calculations for eccentrically loaded rivet connexions.

Strength of welded connections.—Simple butt and fillet welds.

Aerial ropeways, cableways, and three-hinged arched structures.

Masonry and brick structures.—Stability of chimneys, retaining walls, dams.

Earth pressure.—Elementary theory, with application to the design of ore bins, retaining walls, foundations.

Reinforced Concrete.—Elementary theory as applied to columns, beams, and slabs ; bins and retaining walls.

Timber as a structural material. General considerations. Simple timber structures and structures in timber and steel.

(8) Electrical Engineering

The general principles, construction and operation of a.c. and d.c. machines, transformers, mercury-arc rectifiers and apparatus.

Transmission and distribution of electrical power above and below ground.

Arrangement and location of sub-stations and sub-station apparatus.

Principles, construction and arrangement of cables and switchgear for use above and below ground.

Control, protection and testing of electrical machinery and apparatus.

Economics of electrical power generation, distribution, and utilization, effect of power factor, load factor, etc.

Special applications of electricity to the driving of compressors, to coal-getting, conveying, haulage, mine locomotives, winding, ventilation, pumping, signalling and lighting.

Electrical sections of Coal Mines Regulations.

(*Note.*—It is the intention of the University gradually to introduce the rationalized M.K.S. system of units for Calculations in Electrical Engineering.)

(9) Principles of Mining I

Mineral Deposits.—Types : lodes, beds, masses, surfacial masses, alluvial deposits. Shape, extent, features, irregularities, and faulting of deposits.

Prospecting.—Geological reconnaissance. Surface or manual prospecting ; geophysical or instrumental prospecting.

Boring.—Percussive and churn drilling ; rotative and core drilling. Bore-hole surveying. Underground drilling.

Explosives.—Nature ; characteristics ; classes and compositions. Fuses and detonators. Handling and storage. Charging and firing. Misfires.

Shot-hole Drilling.—Percussive drilling ; hand tools and manual drilling. Rock drills and machine drilling. Rotative drilling by hand and machine.

Breaking Ground.—By explosives, coal cutters, pneumatic picks, miscellaneous means ; and by caving under ground weight.

Support and Linings.—Ground pressure ; water pressure ; rock strength ; support and lining of vertical shafts, inclined shafts and roads, level roads and working places. Set timbering, continuous walling, water-tight lining, supports in advance for running ground. Subsidence and shaft pillars.

Mine Development.—Type, location, size, and sinking of vertical shafts ; layout and making of incline shafts, slopes, slants, adits, shaft stations, pit bottoms, main crosscuts, main and district roads.

Face Development.—General layout of temporary roads to provide length of working face. Winzes and raises, subsidiary crosscuts, passes for mineral and filling. Straight-road development ; contour development. Amount of advance development.

Mining Methods.—Room mining ; room and pillar ; pillar and stall ; bord and pillar ; longwall. Back stoping ; rill stoping ; flatback stoping ; sub-level stoping ; underhand stoping. Pillar and stope mining ; transverse-stope, longitudinal stope. Top slicing ; bottom slicing ; sub-level caving, block caving.

(10) Topographical Surveying

Measurement of Distances.—Use of chains and steel tapes. Measurement of base-lines. Surveys depending mainly on linear measurements. Auxiliary instruments employed.

Exploratory Surveying.—Use of hand instruments ; prismatic compass, box sextant, aneroid barometer and Abney level.

Traversing with Compass Mounted on Tripod.—Magnetic declination and its variations. Traversing with fixed and loose needles.

The Theodolite.—Construction, use, manipulation and adjustment of the transit theodolite.

Traversing with the Theodolite.—Independent and triangulation-supported traversing. Plotting by protractor and by rectangular coordinates. Use of traverse tables. Adjustment of closing error.

Triangulation.—Measurement of base-lines ; simple triangulations ; complex systems with primary, secondary and tertiary orders satellite stations ; intersections and resections. Errors and their distribution.

Levelling.—Use and adjustment of levels ; levelling staves. Plotting of profiles. Special instruments and methods for precise levelling. Effect of earth's curvature and refraction in levelling over long distances. Trigonometrical levelling.

Tacheometric Surveying.—Tacheometer or stadia theodolite ; stadia staves. Contouring. The direct-reading tacheometer.

Plane Tabling.—Methods of plane tabling and instruments employed ; simple and telescopic alidades ; the Beaman stadia arc. Application of the range-finder to plane tabling, and its adjustment.

Geographic Position.—Determination of latitude, longitude and azimuth. Field astronomy and use of Nautical Almanac.

Measurement of Areas and Volumes.—Computations ; use of planimeter and computing scale. Measurement of excavations and dumps.

Aerial Surveying.—Elements of photogrammetry.

Setting-out.—Roads, railways, buildings, drainage and property boundaries.

Study of Errors.—Sources, classes, propagation and growth of errors. The distribution of errors.

(II) Mining Geology

Nature and Origin of Mineral Deposits.—Mineral deposits defined ; their forms and modes of occurrence ; the principal genetic processes and the structural controls of mineral localization. Classification of mineral deposits. Primary and secondary variations in ore-deposits ; ore-shoots ; surficial alteration ; impoverishment and enrichment. Folding and faulting of mineral deposits.

Geology of Fuels.—Kinds of coal and classification ; peat, lignite, coal, cannel, anthracite. The origin, variations, and relations of coals and coal-measures. Chemical and physical constitution of coal, and the rank of coal. The distribution and tectonics of typical coal-fields, especially those of Great Britain. Concealed coal-fields and their bearing on coal resources. The sedimentary and structural features of coal seams ; the relation between the structures of coal-fields and problems of underground water.

The origin of petroleum. Relations between geological structure and the occurrence of petroleum ; the migration and accumulation of oil and gas.

PART III

(12) Mining Machinery

Machinery used in Primary Operations.—Rock drills, cutting and loading machines, conveyors.

Haulage machinery.—Resistance and tractive effort ; rope haulage ; locomotive haulage. Coefficient of adhesion ; limiting gradient. Trolley-wire, battery, Diesel and compressed-air locomotives.

Winding machinery.—Winding systems for vertical and inclined shafts. Velocity, torque and power curves for complete winding cycles. Methods of balancing, electric winders, steam winders ; methods of control, safety devices. Capital and operating costs.

Ventilating Machinery.—Air flow in shafts and roadways ; centrifugal fans, axial flow fans. Fan characteristics and mine characteristics. Thermodynamics of natural ventilation. Fan testing.

Pumping Machinery.—Storage ; pumping capacity and load-factor. Analysis and treatment of water. Flow in pipes ; reciprocating, centrifugal and turbine pumps. Main shaft installations and sinking pumps.

Compressed-air machinery.—Theory of air-compressors and motors ; reciprocating compressors, turbo-compressors and hydro-compressors ; reciprocating and rotary air motors. Transmission of compressed air.

Mine Cooling Machinery.—Refrigeration and dehumidification of mine air. Refrigerator cycles ; vapour compression machines ; air machines. Coefficient of performance ; positional efficiency ; energy consumption and power. Typical mine installations.

(13) Assaying

Candidates will be expected to have a sound knowledge of the chemical reactions involved in the analytical methods set forth below, and must be able to discuss, critically, the reason why a method is selected for a particular purpose.

1. Principles and detailed methods of sampling solids, liquids and gases.

2. The determination of the major constituents of ores and metallurgical products by fire and/or wet methods, e.g., Antimony, arsenic, chromium, copper, gold, iron, lead, manganese (total and available), nickel, silver, sulphur, tin, tungsten and zinc including the assay of bullion.

3. Examination of gold and silver ores to determine their amenability to amalgamation and cyanidation. Testing of cyanide solutions for control purposes. Analysis of commercial cyanide and lime.

4. The testing and analysis of fuels.

or The Testing and Utilization of Fuels

Sampling.—Principles and detailed methods of sampling of solid, liquid and gaseous fuels.

Coal.—Proximate analysis and sulphur determination. Determination of calorific value in the bomb calorimeter. Washability tests. Determination of caking index and swelling number. Carbonization assays.

Liquid Fuels.—Determination of specific gravity, flash-point, viscosity. Determination of calorific value and sulphur content.

Gases.—Analysis of air, mine, flue and producer gases.

Water Treatment.—Simple testing and treatment of boiler feed-water.

Testing of Mine Dusts.

Coal Utilization.—Carbonization at low and high temperatures. The manufacture of product gas and water gas. The production of oils from coal by hydrogenation. Pulverized Fuel. (Principles only.)

(14) Mineral Dressing

The written examination is divided into three sections and candidates must take Section I and *either* Section II *or* Section III. Candidates taking Section II must take also Testing and Utilization of Fuels and those taking Section III must take also Assaying.

Section I (General)

Nature and Scope.—Place and purpose of Mineral Dressing. Physical characteristics used in treatment, e.g., colour, density, surface properties, paramagnetism and conductivity. Crystal interlock and economic grinding mesh.

General Theory.—Crushing hypotheses of Kick and Rittinger. Laws of Stokes and Newton regarding settlement of particles in fluids. Theory and practice of sampling and sample reduction. Sizing, Sedimentation, flocculation, Brownian movement. Free and hindered settling. Laminar and turbulent flow. Film sizing in horizontal currents. Elutriation. Viscosity. Hydrogen ion concentration. Surface properties. Theory of froth flotation and reagents.

Washing, sorting, hand-picking. Principles applied in sluicing, jigging, tabling, heavy-media separation, froth flotation, magnetic and electrostatic separation.

Plant Practice.—Breaking, crushing and fine grinding. Construction, adjustment and maintenance of jaw breakers, gyratories, rolls, beater mills, pendulum mills, tumbling mills. Screen mechanisms, types, cloths. Mechanical and hydraulic classifiers, hydrosizers, thickeners, filters. Holding, handling and transporting appliances including bins, feeders, conveyors, bucket elevators, pumps. Safety practice. Technical control. Economic considerations.

Section II (Coal)

Background.—Technical and economic justifications. Factors involved including losses during treatment ; consumer requirements ; transport, moisture problems ; types of impurity ; product storage and disposal ; trade descriptions and specifications ; costs.

Characteristics.—Coal types and rank ; inherent and free ash and other impurities ; specific gravity ; breaking mode ; strength ; grindability ; coking properties.

Laboratory Practice.—Sink-float tests. Washability curves. Laboratory sizing. Tabling and washery control tests. Sedimentation, flocculation and treatment of washery water. Flotation tests.

Plant Practice.—Specialized use of crushing, screening, conveying machinery. Dust control. Water circuits. Picking. Lighting. Flow-sheets.

Gravity Concentration.—Jigging. Sluice action. Differentiation in heavy fluids. Pneumatic separation. Representative processes, e.g., Chance, Baum, H. and H., Rheolaveur, tabling (wet and dry), and the principles, construction, operation and control of machines embodying these processes. Optimum feed considerations for a process.

Froth Flotation.—Types of cell, construction, application and control. Circuits. Adjustment and maintenance.

Washery Water.—Practice of thickening, filtration, circulation, etc. Disposal of silt, fouled water. Density control and clarification.

Coal Products.—Grading. De-watering, drying, storage and loading. Stock-piles, spontaneous combustion. Forming and reclaiming dumps, loading and despatch.

General.—Flow-sheets. Organization of a coal washery.

Section III (Minerals)

Concentration Tests.—Simple tests of amenability to treatment by common mineral dressing methods.

Liberation.—Crushing, grinding and grading. Jaw crushers, gyratory and cone crushers. Hammer mills, rolls, stamps, ball mills (high and low discharge), rod mills, tube mills, runner and pendulum mills. Screens, hydraulic and mechanical classifiers.

Concentration.—Washing, sorting and hand-picking. Gravity methods ; sluices, strakes, jigs, tables, heavy media separation. Froth flotation and table agglomeration. Magnetic and electrostatic methods. Centrifugal appliances. Typical machines, including fixed and moving-screen jigs, shaking tables, mechanical and pneumatic flotation cells, spiral separators, centrifugal pumps, thickeners, filters, reagent feeders, etc.

Control and Chemical conditions in ore pulps.—Arrangement of plant for simple gravity, flotation and other treatments and for combinations of these. Use of roughing and re-treatment circuits. Construction and use of flow-sheets. Methods of control including the use of chemical and screen analyses. Wet and dry sampling. Automatic weighing. Handling of ore and disposal of products. Computation of concentration ratio and efficiency. Economic factors in flow-sheet design and in plant.

(15) Mining Economics

The Mining Industry.—Importance to the community. Difference from and resemblance to other industries. Mineral reserves the basis of the industry. Sampling. Preparation of sample for analysis.

Management.—Duties and organization. Efficiency Engineering. Time Studies. Standardization. Personnel, Management, training of labour, methods of promotion, standards of performance, planning in advance, supervision

Mineral Reserves.—Prospective extensions.

Markets and Marketing.—Methods of Sale. Standardization of products.

Property Valuation.—Estimated capitalized or present value. Incidence of the various factors in the computation.

Money Requirements.—For the property, equipment, mine development and working capital.

Financial Constitution of Mining Enterprises.—Joint Stock and Limited Liability Companies. Company Capital and shares. Loan Capital and Debentures. Working Capital. Nominal Capital and Intrinsic Capital. Properties held under leasehold.

Reports and their preparation.

Financial Statements.—Balance Sheet. Operating or Working Account. Profit and Loss Account. Appropriation Account. Depreciation and Amortization. Critical examination of the financial position.

Book-keeping.—Principal and subsidiary books. Account and statistical books. Entries and postings. Balancing and closing accounts. *Time sheets and Pay sheets*—Forms to suit different conditions of employment. Mechanized Accounting Systems.

Labour.—Day work, contract work, piece work, and bonus work.

Stores.—Mining stores, regular and contract purchases, miscellaneous purchases.

Store-keeping.—Books, forms, and methods used for purchase, issues and sales.

Cost Accounting.—For various mining operations, labour, stores, and management.

(16) Principles of Mining II

Openpit Mining.—Hand-loading pits, with shaft with incline, with ropeway, with level traction. Mechanical shovels, drag excavators, bucket excavators ; locomotive traction. Stripping methods.

Alluvial or Placer Minings.—Ground sluicing ; hydraulicking ; pump hydraulicking ; dredging. Stripping methods, drift mining, deep-lead mining.

Loading.—Direct loading by hand, mechanical shovel and scraper ; conveyor loading ; chute loading, pass and chute loading.

Haulage.—Rails and track. Mine wagons. Use of hand tramping, animal traction, locomotive traction, mechanical haulage and conveyors. Brake planes and self-acting inclines.

Winding or Hoisting.—Headframes. Incline winding. Vertical winding and cages ; cage loading and unloading ; vertical skips. Ropes ; material, construction, lay, types, cappings, and attachments. Winding systems and winding methods.

Drainage.—Vertical distribution of underground water. Drainage measures on surface. Underground measures ; adits, and water stoppings. Precautions against irruptions of water underground. Pumps ; main types, auxiliary types. Sinking pumps and station pumps.

Lighting.—Naked and enclosed lights. Hand and cap lamps. Electric lighting. Safety lamps, electric and flame types. Lamp houses and organization.

Ventilation.—Noxious gases and dusts in mine air. Explosive mixtures of air and gas ; testing for gas in mine air. Humidity. Natural ventilation. Fan ventilation. Estimation and control of the necessary circulation ; resistance of air-ways ; ventilation districts, stoppings, regulators, crossings, etc. Anemometers, pressure gauges, and hygrometers. Coal dust and stone-dusting. Mine fires.

Accidents and Rescue.—Causes and rates of accidents. Treatment and transport of injured. Means for prevention. Rescue equipment and organization.

Health and Welfare.—Diseases associated with mining, prevention and treatment. Change-houses and baths. Housing and education.

(17) Mine Surveying

Surveying with Miners' Dial.—Manipulation, adjustment, and use of various types of dials.

The Mine Theodolite.—Transit theodolites with and without additional interchangeable side and top telescopes. Special centring appliances. The three-tripod system. The effect of errors of instrumental adjustments on the accuracy of underground surveys. Precise traversing for holing-through. The more expeditious traversing methods for routine and periodic surveys. Connexion of the mine triangulation with the geodetic triangulation.

Correlation of Underground and Surface Surveys.—Plumb-wiring in one vertical shaft, and in two vertical shafts, traversing inclined shafts ; and various combinations. Correlation by precise magnetic methods using orientation lines to correct for variation of magnetic declination and instrument errors.

Underground Levelling.—Use of the level ; underground levelling with the theodolite by horizontal sights or by vertical angles. Measuring the vertical depths of shafts.

Underground Setting-out.—Setting out a point having given co-ordinates ; giving and maintaining direction and gradients for inclined shafts, slopes, levels ; consideration of the accuracy required for any given work. Setting out horizontal and vertical curves.

Stope and Face Surveying.—Use of Miners' dial, hanging compass with hanging clinometer, and Locke level for surveying excavations. Tape triangulation, radiation traversing methods.

Borehole Surveying.—Design and use of borehole survey instruments.

Mine Models.—Use of mine models ; methods of construction. Tri-dimensional maps.

MASTER OF SCIENCE, DOCTOR OF PHILOSOPHY AND DOCTOR OF SCIENCE

Candidates who have obtained the Degree of B.Sc. (Engineering) in Mining will be permitted to proceed to the M.Sc. (Eng.), Ph.D. and D.Sc. (Eng.) Degrees in accordance with the regulations in Engineering for External Students which may be obtained on application to the External Registrar.

INSTITUTIONS RECOGNIZED FOR THE PURPOSES OF THE B.SC. (ENGINEERING) DEGREE IN MINING

Barnsley, Mining and Technical College.

Edinburgh, Heriot-Watt College.

Glasgow, Royal Technical College.

Wigan and District Mining and Technical College.

UNIVERSITY OF LONDON



REGULATIONS

FOR DEGREES IN

METALLURGY

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

B.Sc. (ENGINEERING) EXAMINATION IN METALLURGY

(OLD REGULATIONS—TRANSITIONAL ARRANGEMENTS)

Examinations for the B.Sc. (Eng.) degree in Metallurgy will no longer be held under the Old Regulations but candidates who were previously registered under these regulations may complete their degree examinations in accordance with the following scheme :—

1. Candidates referred in one subject of Part I, Old Regulations, may complete that Part by passing in the corresponding subject or subjects under the New Regulations as follows :—

<i>Old Regulations</i>	<i>New Regulations</i>
PART I	PART I
General Metallurgy. Metallurgical Analysis Part I	Introductory Metallurgy. Metallurgical Analysis I.
Metallography and Pyrometry. Fuel and Refractory Materials. Mineral Dressing.	PART II
	Physical Metallurgy I.
	{ Fuel. Refractory Materials. Minerals and Mineral Dressing.

2. Candidates who have completed Part I under Old Regulations can take their degree in 1954 only by passing in the following subjects of Parts II and III under the New Regulations :—(7) Metallurgical Analysis II, (8) Mechanical and Thermal Treatment, (9) Ferrous Metallurgy (Production), (10) Non-Ferrous Metallurgy (Extraction) and (11) Physical Metallurgy II.

3. In and after 1955 candidates will be required to take all their examinations under the New Regulations.

4. Candidates who were previously registered for Part I or Part II of the Final Examination under the Old Regulations will be permitted to complete their degree examinations without attending a recognized Institution.

5. The B.Sc. (Engineering) Degree in Metallurgy is awarded to candidates who are successful in both parts of the Final Examination.

6. Successful candidates will be awarded First or Second Class Honours or a Pass Degree.

7. Candidates who have obtained the B.Sc. Degree, whether Pass or Honours, in the Faculty of Engineering are not permitted in any circumstances to re-enter for the examination in the same branch ; they may, however, enter for the examination in any other branch.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the examinations equivalent to Part II (Old Regulations) each candidate must (a) have been registered as an External Student preparing for the Degree of B.Sc. (Eng.) in Metallurgy at least three academic years previously, (b) have passed Part I of the examination under the Old Regulations and (c) have obtained approval of candidature for the examination.

2. Candidates who have been referred in Part I, however, are permitted to take their referred subject either alone or with Part II. A candidate referred in Part I, who takes his referred subject with Part II and fails in his referred subject, shall have no report made upon his performance in Part II.

[For particulars of DATE OF EXAMINATION, APPROVAL OF CANDIDATURE, ENTRY TO EXAMINATION, EXAMINATION FEES, TIME TABLE, NOTIFICATION OF RESULT and AWARD OF DIPLOMA, *see under* the corresponding heading in the New Regulations, page 2056 *et seq.*]

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final B.Sc. (Engineering) Examination in Metallurgy (Part II) may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the External B.Sc. (Engineering) Examination in Metallurgy who have already passed Part I and who have completed more than half of the Part II Examination are eligible to apply for an Aegrotat Degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which if also reached in the remainder of the examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

B.Sc. (ENGINEERING) DEGREE IN METALLURGY (NEW REGULATIONS)

1. Candidates for the Degree of Bachelor of Science (Engineering) in Metallurgy are required to satisfy the minimum University and Faculty entrance requirements, to have been registered as External Students for the Degree of B.Sc. (Eng.) in Metallurgy, to have obtained the necessary qualifications for admission to the Final Examination, and to pass Part I, Part II and Part III of the Final Examination.

2. The standard of the Final Examination is that which would normally be required of a whole-time student after a course of study extending over three academic years, Part I of the examination being taken one year, Part II of the examination being taken two years, and Part III of the examination being taken three years after completion of the Intermediate Examination in Science or an accepted equivalent.

3. Successful candidates will be awarded First or Second Class Honours or a Pass Degree.

4. Candidates who have obtained the B.Sc. Degree, whether Pass or Honours, in the Faculty of Engineering, are not permitted, in any circumstances, to re-enter for the examination in the same branch. They may, however, enter for the examination in any other branch.

FACULTY REQUIREMENTS

A candidate who has satisfied the minimum University entrance requirements by means of a General Certificate of Education will be required to have passed in Mathematics at Ordinary or Advanced Level.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to Part I of the Examination, each candidate must :—

(a) have satisfied the minimum University and Faculty entrance requirements and have been registered as an External Student preparing for the degree of B.Sc. (Eng.) in Metallurgy ;

(b) (i) have passed the Intermediate Examination in Science in Pure Mathematics, Applied Mathematics (or in Mathematics (Pure and Applied)), Physics and Chemistry ;

or (ii) have passed at main subject standard at a Higher School Certificate Examination or Examinations recognized by the Ministry of Education as an approved second examination in Secondary Schools in Pure Mathematics (or in Mathematics (Pure and Applied)), Physics and Chemistry ;

or (iii) have passed at main subject standard at a Higher School Certificate Examination or Examinations recognized by the Ministry of Education as an approved second examination in Secondary Schools in Chemistry ; at main subject standard in two of the subjects Pure Mathematics, Applied Mathematics and Physics and at subsidiary standard in the third.

(A candidate who has obtained a Higher School Certificate with passes at main subject standard in one or more of the subjects required will be permitted to complete his qualification by passing in the remaining subject, or subjects, at the Intermediate Examination in Science. The regulations for this examination should be consulted.)

(A candidate who has not qualified for the award of a Higher School Certificate but who has been permitted to count successes

gained in 1949 or 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum entrance requirements of the University will be permitted to count either or both of these as part of his qualifications for admission to the degree.)

or (iv) have passed at the Advanced Level in an examination or examinations for the General Certificate of Education awarded by one of the approved University Examining Bodies in the subjects corresponding to Mathematics, Physics and Chemistry at the Intermediate Examination in Science.

(A candidate who has passed at the Advanced Level in the General Certificate of Education Examination or Examinations in two or more of the subjects required, will be permitted to complete his qualification by passing in the remaining subject or subjects at the Intermediate Examination in Science. The regulations for this examination should be consulted.)

or (v) have passed the Intermediate Examination in Engineering of this University with Chemistry as his optional subject. (A candidate who was referred in Engineering Drawing at this examination will also be admitted to Part I of the Final.) Candidates who did not pass in Chemistry will be required to pass in this subject at the Intermediate Examination in Science (see para. 2.)

or (vi) have obtained the Engineering Cadetship *Diploma* of the Ministry of Education and have passed in Chemistry at one of the examinations specified above ;

(c) have attended a prescribed course of study at an Institution recognized for the purpose by the University, except as provided for in para. 5 below ;

(d) have obtained approval of candidature for the examination.

2. Candidates who are required to pass in one subject at the Intermediate Examination in Science in order to complete qualification 1 (b) above may apply for approval of candidature for Part I and may in exceptional circumstances and on special application be permitted to enter for the examination concurrently with the Intermediate Examination in Science in the remaining qualifying subject, but in the event of failure in the Intermediate subject no report will be made on their performance at Part I.

3. To be admitted to Part II each candidate must (a) have passed Part I, or have been referred in one subject thereat, (b) have attended a course of study at an Institution recognized for the purpose by the University (except as provided for below) and (c) have obtained approval of candidature for the examination.

4. To be admitted to Part III each candidate must (a) have been registered as an External Student at least three academic years previously, (b) have passed Parts I and II, unless referred at Part I or Part II, (c) have attended a course of study at an Institution recognized for the purpose by the University (except as provided for below) and (d) have obtained approval of candidature for the examination.

5. A candidate who has not attended at a recognized Institution may apply to be registered for the examination if he produces evidence satisfactory to the Council for External Students *either* (a) that he has had at least 5 years satisfactory practical metallurgical experience *or* (b) that he has passed approved examinations required for a degree in another approved University in the British Commonwealth, *or* (c) that he holds a corresponding approved qualification granted in a foreign country. Each application must be accompanied by a fee of £1 1s. 0d. which is in no case returnable.

6. A concession granted under paragraph 5 above will be valid for four years, but application may be made by the candidate for its renewal.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the fourth Monday in June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the three Parts of the Examination during the first term of their course of study for Part I, and not later than 30 January of the year in which this examination is taken. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 30 January, application may be accepted after this date on payment of the late fee of £1 1s. which is not returnable, but no application will be accepted after 20 February in the year of the examination.

ENTRY TO EXAMINATION

The candidate lists will be opened on 8 February. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 13 March and the candidate list will be closed on 20 March. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—								£	s.
Part I	..	..	..	..	..	..	..	4	4
Part II	..	..	..	..	..	..	..	4	4
Part III	..	..	..	..	..	..	..	4	4
Re-examination in referred subject at Part I or Part II (including entry for both Fuel and Refractory Materials to complete Part I (Old Regulations) ..								2	2
Candidates taking Selected papers to complete Part II under Old Regulations								6	6

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for a Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

1. The Final Examination is divided into three parts, and except in the case of referred candidates, Part I must be completed before entry for Part II, and Part II must be completed before entry to Part III. The subjects shall be as follows :—

PART I

Subsidiary Subjects

(i) Physical Chemistry	.. ..	One 3-hour paper
(ii) Applied Electricity	.. ..	One 3-hour paper
(iii) Engineering Drawing for Metallurgists		One 4-hour paper and an examination of the candidates' course work.

Main Subjects

(1) Introductory Metallurgy	.. ..	One 3-hour paper
(2) Metallurgical Analysis I	.. ..	One 3-hour paper and one practical exam. of 8 hours.

PART II

(3) Minerals and Mineral Dressing	..	One 3-hour paper
(4) Fuel .. ..	.. ..	One 3-hour paper
(5) Refractory Materials	.. ..	One 3-hour paper
(6) Physical Metallurgy I	.. ..	One 3-hour paper and one practical exam. of 8 hours.
(7) Metallurgical Analysis II	.. ..	One 3-hour paper and two practical exams. of 8 hours each.

PART III

(8) Mechanical and Thermal Treatment	..	One 3-hour paper
(9) Ferrous Metallurgy (Production)	..	One 3-hour paper
(10) Non-Ferrous Metallurgy (Extraction)	..	One 3-hour paper
(11) Physical Metallurgy II	.. ..	One 3-hour paper and one practical exam. of 8 hours.
(12) Advanced Metallurgy	.. ..	One 3-hour paper, a practical exam. occupying four days of 8 hours each and an examination of candidates' records of practical experience.

2. In subjects requiring a practical examination no candidate will be allowed to pass unless he satisfies the examiners both in the practical and in the written part of the examination.

3. No candidate shall pass unless he obtains the requisite percentage of the aggregate marks and also such proportion (but lower) of the total marks of each of the subjects taken separately as shall satisfy the examiners.

4. All answers to examination questions shall be written in English unless instructions are given to the contrary.

COURSE WORK AND RECORDS OF PRACTICAL EXPERIENCE

1. At the practical examinations candidates are required to bring their *original* laboratory note-books for inspection by the examiners ; and further, candidates may bring for use in the practical examination any book or books they wish, including their own laboratory note-books. Any such books or note-books must be removed at the close of the examination.

2. Candidates taking Engineering Drawing for Metallurgists are required to submit their course work for inspection by the examiners on each and every occasion on which they present themselves for examination and cannot pass unless their course work satisfies the examiners. Candidates whose work is rejected by the examiners shall be notified that they have failed in course work. The drawings must be kept flat and fastened together, and each piece of work must bear the candidate's name and examination number, together with an official stamp or signature of the Institution in which it was carried out. Candidates not in attendance at a recognized Institution should attach a declaration that the drawings are their own individual work. Candidates will be instructed on the examination programme sent to them with their entry forms as to time and place for delivery of their course work.

3. At the practical examination in Advanced Metallurgy for Part III each candidate must submit *in and after* 1955, in addition to his practical notebooks, a statement that he has had not less than twelve weeks' suitable practical experience of which ten must have been devoted to work of a definitely metallurgical character. The statement must be certified by the manager or some other responsible official of the undertaking or undertakings in which the experience has been gained. Experience in any branch of the metallurgical industry will be accepted, e.g., smelting, refining, foundry work, fabrication, scrap metal recovery or work in an industrial laboratory, but plant operations would be preferred. Candidates would be well advised, in addition, to spend a few weeks in machine shops.

4. If the examiners are not satisfied that a candidate has had sufficient practical experience he will be required to submit further evidence for consideration at a subsequent examination, and if he has otherwise satisfied the examiners in the remaining parts of the examination the degree will be awarded when his practical experience has been approved.

REFERENCE

1. A candidate for Part I or Part II of the examination who fails to reach the minimum standard in one subject may be referred, i.e., he may be permitted, on the recommendation of the examiners, to present himself in that subject alone or with the next following Part.

2. A candidate may take a referred Part I subject concurrently with Part II and if he passes in Part II will be credited with that Part and be allowed to proceed to Part III even though he may have failed in the referred subject. Similarly, a referred Part II subject may be taken

concurrently with Part III but a candidate who passes in Part III but fails in his referred subject will not be awarded the Degree until the referred subject has been passed.

3. A candidate referred at Part I who enters for Part II without passing or having passed in his referred subject will not be allowed additional reference in any Part II subject.

4. The examiners will recommend that the candidate be referred only if his failure in the subject is not serious, and if his performance in the remaining subjects is reasonably good.

EXEMPTIONS

Note.—No exemptions from this examination are given in whole or in part except on the result of examinations of this University as follows :—

1. Candidates who have obtained the B.Sc. Special Degree in Chemistry may claim exemption from examination in Physical Chemistry.

2. Graduates in Engineering may claim exemption from examination in Applied Electricity and in Engineering Drawing for Metallurgists.

3. Graduates in Engineering (Mining) may claim exemption from examination in Applied Electricity, in Engineering Drawing for Metallurgists and in Minerals and Mineral Dressing.

4. Graduates in Chemical Engineering may claim exemption from examination in Physical Chemistry, in Applied Electricity, in Engineering Drawing for Metallurgists and in Fuel.

5. Candidates who have passed the Intermediate Examination in Engineering under the old regulations with Engineering Drawing will be exempt from examination in this subject at Part I, but this does not apply to candidates who were exempt in Engineering Drawing at the Intermediate on some other qualification.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 3 August the External Registrar shall publish (a) a list of the candidates who have passed ; (b) a list of the candidates who have obtained Honours, arranged by the examiners in two classes, and in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final B.Sc. (Engineering) Examination in Metallurgy (Part III) may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the External B.Sc. (Engineering) Examination in Metallurgy who have already passed Parts I and II and who have completed more than half of the Part III Examination are eligible to apply for an Aegrotat Degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.Sc. (Engineering) in Metallurgy under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES

(New Regulations)

PART I

(i) Physical Chemistry

The constitution of matter. Atomic-molecular theory. Theory of atomic structure : electron, proton, neutron, positron. Atomic number, Nuclear structure. Isotopes. Electronic arrangements and valency. Periodic classification of the elements. Radioactivity, natural and artificial.

Thermodynamics : first and second laws. Absolute scale of temperature. Thermochemistry. Heat of reaction. Free energy and other simple thermodynamic functions.

The properties of gases. Kinetic theory and the gas laws.

Vapour-liquid transformations. Critical phenomena. Latent heat.

The properties of liquids : vapour pressure, specific heat, surface tension, refractive index, viscosity.

Liquid-solid transformations. Crystallization of liquids. Crystallization from solution. Velocity of crystallization. Undercooling phenomena.

The nature and properties of crystalline solids. Lattice structure. Principles of crystal analysis by X-ray and electron diffraction methods. Crystal planes and directions. Nature and types of inter-atomic bonds. Space lattice types of pure metals. Allotropic transformations. Nature and properties of metallic solid solutions and intermetallic compounds. Interstitial compounds. Super-lattices.

The phase rule. Interpretation of typical equilibrium diagrams (temperature-composition) of binary alloy systems and simple ternary alloy systems.

Chemical reactions. The reaction Isotherm. The Activity concept. Law of mass action. Effect of pressure and temperature on equilibria. Velocity of reaction. Catalysis.

Conduction in electrolytes. Transport numbers. Equilibria in electrolytes. Strength of acids and bases. Hydrolysis. Hydrogen ion exponent. Chemical and electrical energy. Voltaic cells. Electrode potential energy. Mechanism of electrolysis. Anodic and cathodic reactions. Decomposition potential. Polarization including overpotential. Primary and secondary cells.

Surface phenomena, adsorption and colloids.

Physico-chemical principles underlying the extraction of metals from their oxides, sulphides and salts. Reduction of metallic oxides by hydrogen, carbon, carbon monoxide and baser metals. Metallic sulphides : displacement of sulphur by oxygen : reduction. Electrolytic deposition of metals from aqueous solutions and molten salts.

(ii) Applied Electricity

1. *Alternating Currents and Alternating Current Circuits.*—Wave forms, average and r.m.s. values. Circuits containing resistance, inductance and capacitance in series and in parallel. Power and power factor. Power factor improvement. Current and voltage waves in the electric arc.

2. *Alternating-current Generators.*—Simple construction of salient and non-salient pole machines. Three-phase machines and circuits. Star and delta connections. Three-phase power measurements. Connections of wattmeters.

3. *Transformers.*—Simple construction. Core and shell types. Arrangements of windings. E.m.f. equation and transformation ratio. Operation on no-load and on load. Voltage regulation. Three-phase transformers. Effects of unbalanced loads. Scott-connected transformers.

4. *Electric Furnaces.*—Essential features of arc, resistance, electrolytic and induction furnaces from the electrical aspect. Forces between conductors, pinch effect. Different transformer connections used. Construction and principles of high-frequency furnaces.

5. *Instruments.*—Construction and action of moving-coil, moving-iron and dynamometer instruments and use as (i) ammeter, (ii) voltmeter. Multi-range moving-coil and moving-iron instruments. Use of dynamometer instrument as wattmeter : care needed when measuring small power, and when used on circuits of very low power factor. Use of moving-coil instrument with metal rectifier for a.c. measurements. Energy meters. Load-error curve of commercial types.

6. Tariffs and systems of supply.

Suggested Course of Practical Work

(This course should occupy about 36 hours, i.e., 18 two-hour experiments to be chosen from this list)

1. *D.C. Circuits.*—Wheatstone bridge, series and parallel circuits. Simple lattice networks.

2. *A.C. Circuits.*—Circuits containing resistance, inductance and capacitance in series and parallel. Effect of varying frequency. Power and power factor. Resonance in series and parallel circuits. Power

factor improvement by use of capacitance. Impedance and effective resistance of solenoids with and without iron cores.

3. *Three-phase Circuits*.—Measurement of power. Two-wattmeter method of power measurement. Relationships between line and phase voltages and currents for star and mesh circuits containing resistance and inductance. Unbalanced loads. Determination of phase sequence.

4. *Transformers*.—Voltage and current ratios. Measurement of iron losses with varying voltages. Load tests at constant voltage. Short-circuit test. Equivalent resistance, reactance and impedance. Three-phase and Scott-connection of transformers.

5. *Alternators*.—Open-circuit, short-circuit and load characteristics of single and three-phase machines.

Effect of resistance, inductance and capacitance loads on terminal voltage.

6. *A.C. Motors*.—Starting and load tests on induction and synchronous motors.

7. *D.C. Generators and Motors*.—Open-circuit and load characteristics of separately excited and self-excited generators. Load tests on shunt, series and compound motors at constant voltage varying load and constant torque varying voltage. Determination of efficiency from measurement of losses.

8. *Measurements*.—Measurement of high and low resistance. Use of Post-Office box. Megger, bridge megger and voltmeter-ammeter method. Tracing connections with cell and detector. Iron testing and determination of magnetising force, flux density and permeability. Hysteresis. Calibration of voltmeter, ammeter and wattmeter. Temperature measurement by increase of resistance. Characteristics of copper oxide rectifier, diode and triode.

(iii) Engineering Drawing for Metallurgists

Fundamental principles of engineering drawing with special reference to the British Standard Specification for Drawing Office Practice.

Practical plane and solid geometry, including pictorial projections. Elements of graphic statics. Drawing and sketching engineering details and machine parts.

A knowledge of engineering components related as far as possible to the requirements of the metallurgical industry and of the materials used in their construction.

Suggested course work.

3 general arrangements of pieces of equipment or testing apparatus, such as testing machine, furnace, crusher.

1 sheet of small free-hand sketches of details, such as burners, valves, parts of furnaces.

1 lay-out of plant, e.g., Bessemer or cyanide plant, foundry, heat treatment shop.

(I) Introductory Metallurgy

1. A general and elementary review of the scope and purposes of the metallurgical operations detailed in the subsequent syllabuses and the meaning of the terms commonly used in them. The relationship which exists between these operations. The relevance and importance of the various subsidiary subjects included in the course.

2. The principles underlying the chief classes of operations by which metals are extracted from their ores.

The fundamental requirements of roasting, smelting, refining, leaching and electrolytic processes. The extent to which these can be satisfied in practice. Evolution and development of modern appliances. Elements of furnace construction and methods of heating, including principles of heat exchange, fuel conservation, recovery of waste heat and heat conservation.

Slags : their nature and the various means of classification. Reasons for these classifications.

3. The fundamental principles underlying the operations by which metals are adapted to commercial use.

The molten state and casting operations. Theoretical considerations. Metals and alloys regarded as solutions. Miscibility. Segregation. Methods of casting.

Principles of thermal analysis and of the microscopic examination of cast and worked metals.

Purposes and effects of heat treatment.

Working and shaping of metals and alloys. General principles underlying forging, rolling, pressing, extruding, spinning and drawing.

Mechanical tests : meaning of the terms strength, hardness, ductility, brittleness and toughness as deduced from the tests.

4. *Sampling*.—The purposes of sampling and analytical control. The general principles of the sampling of solid and liquid metals, friable solids, liquids and gases.

5. *Transportation and Storage*.—Transportation in relation to plant layout. Methods of transportation, including grabs and electro-magnetic cranes, conveyor belts, elevators, rope-ways, etc. Stock piles. Storage bins. Tailings disposal.

6. *Air Supply*.—Natural and forced draught. Fans, blowers and compressors. Blast heating.

7. *Dust and Fume*.—Dry, wet and electrostatic methods of dust and fume collection.

8. *Filtration*.—Hydroseparators ; thickeners ; gravity, pressure and suction filtration ; centrifuges.

9. *Water Supply*.—Pumps ; air lifts ; pressure chambers. Water conditioning.

(2) Metallurgical Analysis I

Candidates will be expected to have a sound knowledge of the chemical reactions involved in the analytical methods set forth below, and must be able to discuss critically the reason why a method is selected for a particular purpose.

1. Principles and detailed methods of sampling ores, fluxes, fuels, metals and metallurgical products both mechanically and by hand.

2. The fire assay of ores and metallurgical products.

3. The assay of gold and silver bullion.

4. Examination of gold and silver ores to determine their amenability to amalgamation and cyanidation. Examination of cyanide solutions for control purposes. Analysis of commercial cyanide, lime.

5. The determination by wet methods of chromium, copper, iron, lead, manganese (total and available), nickel, sulphur, tin and zinc as major constituents of ores, fluxes and metallurgical products.

6. The testing and analysis of fuels and furnace gases.

PART II

(3) Minerals and Mineral Dressing

Elements of Economic Geology.—The principal ore-forming processes and their relation to mineral dressing. The more important types of ore deposits.

Mineralogy.—Common gangue and economic minerals. Simple methods of identification. Microscopy of minerals by transmitted and reflected light. Elements of sedimentary petrology. Paragenesis. Liberating mesh sizes.

Mineral Dressing—General.—Place and purpose of mineral dressing in extraction metallurgy. Physical characteristics utilized in treatment, including colour and lustre, density, surface properties, para-magnetism, and conductivity. Crystal interlock and economic grinding mesh. Control of chemical conditions in ore pulps.

Concentration Tests.—Simple tests of amenability to treatment by common mineral dressing methods.

Liberation.—Crushing, grinding and grading. Jaw crushers, gyratory and cone crushers, hammer mills, rolls, stamps, ball mills (high and low discharge), rod mills, tube mills, runner and pendulum mills, etc. Screens. Hydraulic and mechanical classifiers.

Concentration.—Washing, sorting and hand-picking. Gravity methods ; sluices, strakes, jigs, tables, heavy media separation. Froth flotation and table agglomeration ; magnetic and electrostatic methods. Typical machines, including fixed and moving-screen jigs, shaking tables, mechanical and pneumatic flotation cells ; centrifugal pumps, thickeners, filters, reagent feeders, etc.

Coal Cleaning.—Rank. Types of coal. Fixed and free ash. Brief consideration of methods of cleaning and screening.

Control.—Arrangement of plant for simple gravity, flotation and other treatments and for combinations of these. Use of roughing and re-treatment circuits. Construction and use of flow-sheets. Methods of control including the use of chemical and screen analyses. Wet and dry sampling. Automatic weighing. Handling of ore and disposal of products. Computation of concentration ratio and efficiency. Economic factors in flow-sheet design and in plant control.

Suggested Course of Practical Work

Preliminary.—Density of rock specimens, sands and mineral-water pulps. Determination of voids in crushed gravels. Reduction of samples to convenient assay bulk by coning, rolling and quartering, riffing, etc., and checking accuracy of work by assay.

Recognition of Common Minerals.—Crystal systems and notation. Macroscopic examination of minerals and rocks. Simple blow-pipe and chemical tests.

Microscopic examination in plane and polarized light (transmitted and reflected). Preparation of polished sections. Measurement of grain size. Use of pan, plaque and heavy-liquid methods of separating ground ores into fractions for microscopic examination. Determination of crystal interlock and liberating mesh of simple sulphide ores.

Sizing Tests.—Sizing analysis of ores, and determination of mineral distribution in the various sizes ; application to the examination of concentrates, middlings and tailings. Sedimentation tests on subsieve sizes. Elutriation.

Heavy Media Separation.—Use of heavy liquids to make sink-float separation of coal from shale ; determination of ash content of each fraction thus separated.

Flotation.—Colorimetric determination of pH values. Elementary tests of sulphide ores for amenability to flotation by shaking in glass vessels.

Ore Testing.—Interpretation of flow-sheets taken from milling practice in cyanidation, flotation and gravity concentration.

(4) Fuel

More attention must be given to underlying principles of heat production and utilization than to the description of plant or processes.

1. Chemical composition, physical properties and comparative heating values of the principal solid, liquid and gaseous fuels.

2. *Combustion.*—Chemical principles and thermal effects. Ignition temperatures, ignition limits. Excess air and its effect. Heat losses in flue gases.

3. *Solid Fuels.*

(a) Coal.—Origin and nature, classification and selection of coals for industrial use and for the manufacture of gas and coke. Impurities in coal.

Thermal decomposition of coal. Properties and yields of products. Storage of coal. Oxidation during storage ; practical effects of oxidation. Precautions to minimize effects of oxidation.

(b) Coke.—Properties required for industrial heating, gas making and for blast furnace use.

Brief description of manufacture of gas and metallurgical coke. Effect of modern developments in manufacture on the properties of the coke.

(c) Minor solid fuels.—Very brief consideration of the uses and manufacture of charcoal, low temperature coke, briquettes.

4. *Liquid Fuels.*

Properties. Brief description of nature, origin and preparation. Criteria for fuel oils.

5. *Gaseous Fuels.*

(a) Derived from carbonization of coal. Manufacture in gas and coking plant.

(b) Derived from total gasification of coal or coke.

Chemical and thermal reactions involved in the total gasification of coal and coke.

Manufacture of producer and water gas. Nature and characteristics of fuel ; effects of depth of fuel bed ; varying amounts of steam ; clinkering ; channelling. Efficiency and heat balances.

(c) Natural gas.

(d) Blast furnace gas.

6. *Pulverized Fuel.*

Materials available. Brief consideration of methods of preparation and distribution.

7. *Combustion in Practice.*

Necessity and methods for securing proper combustion. Draught ; primary and secondary air. Influence of time, temperature and turbulence on combustion. *Solid Fuels.*—Physical characteristics of the fuel bed ; dimensions of grate ; depth of bed ; fire-bed cooling ; clinker formation. *Liquid, gaseous and pulverised fuel.*—Pre-treatment ; burners ; combustion space.

Cleaning of gases prior to use.

Comparison of heating by solid, liquid and gaseous fuels.

8. *Heat Transmission and Heat Regeneration.*

Methods of heat transfer. Application of the laws of conduction, convection and radiation. Heat exchanges, regenerators and recuperators. Heat losses from external surfaces. Practical aspects.

9. *Steam Raising.*

Types of boilers ; consideration of requisites for efficient design. Operation—air supply, firing, feed water, purification, cleaning, economisers.

10. *Furnaces.*

Considerations governing the design of a furnace. Selection of type, continuous or intermittent operation. Furnace atmosphere. Combustion and heat transmission. Heat losses, insulation, recovery of waste heat.

11. *Efficient Utilization of Heat.*

Heat balances. General possibilities of recovery of waste heat.

12. *Calculations.*

Calculations in connection with combustion, gasification, preparation of heat balances.

(5) **Refractory Materials**

1. General properties of a refractory material. Deviations from the ideal. Classification.

2. Chemical and mineralogical composition and physical properties of commercial refractories, e.g., silica, alumino-silicates, dolomite, magnesite, chromite, special refractories.

3. Brief consideration of the materials and the general methods used in the manufacture of refractories, e.g., bricks, tiles, crucibles, retorts, furnace linings, ladle linings, muffles. Physico-chemical changes during manufacture. Influence of texture on properties.

4. Selection and application of refractories. Behaviour in service. Physico-chemical changes. Spalling. Slagging ; use of constitutional diagrams. Erosion.

5. Insulating materials. Composition and properties. Selection for and application to metallurgical use. Behaviour in service.

6. The examination and testing of refractory materials (excluding chemical analysis).

(6) **Physical Metallurgy I**

The structure of the atom. Types of bonding. Principles of X-ray analysis. The lattice structure, crystalline nature and characteristic properties of pure metals, solid solutions and intermediate constituents. Crystal planes and directions. Crystallization from the molten state : dendritic growth.

Preparation of microsections : practical and theoretical aspects. The metallurgical microscope, construction and optics. Use of polarized light and ultraviolet light. The electron microscope.

The measurement of temperature. Electrical resistance, thermoelectric, optical and radiation pyrometers : galvanometers, potentiometers, recorders, controllers. Calibration of pyrometers. Advantages, limitations and applications of the various types. Degree of accuracy obtainable under various conditions.

Determination of freezing points, melting points and transformations in solid alloys by heating and cooling curves. Methods of plotting the curves. Construction of equilibrium diagrams of binary alloy systems by means of thermal analysis, physical property determinations, X-ray analysis and microscopical examination of annealed and quenched samples.

Interpretation of types of equilibrium diagrams of binary alloy systems. Effects produced by departure from equilibrium conditions. Undercooling : the metastable and labile states. Microstructural constituents of alloys : primary solid solutions, intermediate constituents, eutectics, products of peritectic reactions, changes in solid solubility and solid transformations including eutectoids and Widmanstätten structures. Principles of heat treatment including age-hardening : effects of such treatments on the structure and properties of alloys.

Methods of representing the constitution of ternary alloy systems. Interpretation of simple ternary diagrams.

The effects of direct and alternating stresses on the structure and properties of metals and alloys. The mechanism of plastic deformation of single metallic crystals, polycrystalline metals and alloys. Effects produced by plastic deformation on the structure and properties of metals. Strain ageing. Mechanism and effects of recrystallization. Hot working compared with cold working.

Constitution, microstructure, properties and uses of the principal binary non-ferrous alloys, based on the equilibrium diagrams, and of more complex alloys of industrial importance, including high-tensile brasses, bearing metals and light alloys.

The iron-carbon diagram. Detailed consideration of the constitution, microstructure, properties and uses of cast steel, cast iron (grey, white, malleable) and of wrought carbon steels in the slowly cooled and normalized conditions. Brief consideration of the effects produced by rapid cooling and by the addition of alloying elements.

Practical Work

Preparation and examination of micro-sections of all the types of metals and alloys (cast, wrought, heat treated), which are considered in the above syllabus. Preparation and interpretation of macrostructures and sulphur prints.

Calibration and use of electrical resistance, thermo-electric, optical and radiation pyrometers. Determination of freezing points, melting points and transformations in solid alloys by heating and cooling curves. Determination of electrical resistivity and magnetic properties of alloys. Dilatation curves.

(7) Metallurgical Analysis (Part II)

Candidates will be expected to have a sound knowledge of the chemical and physico-chemical principles involved in the analytical methods set forth below and must be able to discuss critically the application of these principles.

They will also be expected to have a reasonably detailed knowledge of modern physical methods of analysis.

1. The analysis of irons, steels, alloy steels and ferro-alloys.
2. The complete analysis of the non-ferrous metals and alloys of commercial importance.

3. The complete analysis of the more common ores, fluxes and metallurgical products.

4. The determination of the less common base metals in ores and metallurgical products, e.g., antimony, arsenic, bismuth, cadmium, mercury, molybdenum, selenium, tellurium, titanium, tungsten and vanadium.

5. The analysis of refractory materials.

PART III

(8) Thermal and Mechanical Treatment

Phenomena associated with the melting, casting and working of ferrous and non-ferrous metals, considered from the practical viewpoint. Characteristics of cast metal : macrostructure, blow-holes, shrinkage cavities, segregation : effect on these of mechanical working. Properties involved in the working of metals : plasticity, strain hardening, recrystallization and the effect of temperature. Hot shortness, cold shortness.

Foundry Practice

Types of melting furnaces and methods of operation. Melting and pouring technique : fluxing, deoxidation, de-gassing.

Properties, preparation and testing of foundry sands and bonding materials.

Principles and practice of mould making and core making : green-sand, dry-sand and loam moulding. Pattern design.

Fettling sand castings.

Permanent and semi-permanent mould casting : gravity and pressure die-casting.

Centrifugal casting.

Precision casting.

Casting defects ; causes, detection, effects, avoidance.

Mechanical Treatment

Rolls and rolling mills : principles of design, types, operation and maintenance. Manufacture of plate, sheet, strip, rod, sections, wire and tube from ingots by rolling. Auxiliary equipment and operations : furnaces, manipulators, saws, shears ; flattening, straightening.

Forging, pressing and stamping. Hammers and presses for light and heavy work : types and operation.

Tyre making.

Tube making : piercing, rolling, extrusion, drawing. Seamless and welded tubes.

Manufacture of rod, wire and special sections by cold drawing.

The extrusion process. Presses and dies for rods, sections and tubes.

Spinning and panel beating.

Properties of wrought metals compared with cast metals.

Defects in wrought metals : causes, detection, effects, avoidance.

Welding, Brazing and Soldering

Oxy-acetylene, metal arc, carbon arc, helium arc, atomic hydrogen, butt, flash, spot, seam and projection welding : outline of processes and detailed consideration of metallurgical features including effects on structure and properties of parent metals, residual stresses and causes of cracking in welds and parent metals.

Brazing, hard and soft soldering : methods and effects on metals joined.

Design and strength of joints. Selection of suitable processes for various metals and applications.

Flame cutting.

Heat Treatment

Construction, operation and control of heat treatment furnaces. Advantages, disadvantages and applications of various types.

Furnace atmosphere : effects and control.

Salt baths.

Quenching baths and media.

Distortion, internal stresses and cracking in heat-treated parts : causes and avoidance.

(9) Ferrous Metallurgy (Production)

Iron Minerals and Ores.—Distribution ; economic value. Preparation for smelting. Sizing. Agglomeration (nodulizing, sintering, briquetting). Calcination. Changes produced in composition of ore due to treatment. Magnetic concentration.

Fuels.—Physical properties necessary. Composition of the various classes of fuel used. Physical tests.

Fluxes and subsidiary ferrous materials used in smelting.

Handling, transportation and storage of raw materials.

Blast Furnace.—Historical development. Layout of modern plant. “Lines” and details of construction. Recent developments in construction and design. Construction and functions of stoves and equalizers.

Function of the Air-blast.—Methods of heating and drying. Effects of these treatments on the working of the furnace. Blowing engines.

The Smelting Process.—Chemistry of the process. Furnace reactions. Chemical and thermal balance sheets. Principles of burdening. Calculation of furnace charges. Effects of distribution of burden on the “zones” of the furnace. Influence of variables on the character of the products from the blast furnace.

Operation of the Blast-furnace.—Drying out, blowing in, damping down, blowing out, scaffolding, etc.

Products of the Blast-furnace.—Tapping of iron and slag. Handling and utilization of the products. Cleaning of blast-furnace gas. Economic value of slag.

Production of Ferro-alloys in the Blast-furnace.—Brief survey.

Wrought Iron.—Composition of suitable pig irons. Furnaces ; hand-worked and mechanical. Preparation of furnace hearth and operative details. Chemical reactions of the process. Type of slag produced. Mechanical treatment of the “ball.” Qualities of wrought iron. Properties and uses. Acceptance tests. Modifications of the process—“Aston” ; “Knobbed” charcoal iron.

Steel.—Brief survey of historical development. Classification of the processes.

Bessemer Process.—Acid and basic. Plant lay-out. Construction of converters with particular reference to lining materials. Composition

and supply of hot-metal. Working of both acid and basic charges. Chemistry of the process—behaviour of carbon, silicon, sulphur, phosphorus, manganese. Functions of slag compositions.

Open-hearth Process.—Acid and basic. Layout of plant. Construction of furnaces, ports and regenerators with reference to both stationary and tilting furnaces. Types and properties of fuels used—gas and oil. Charging methods. Mixers and their function. Composition of charge and operative details of the acid process, the “cold scrap and pig” and hot-metal basic processes. Chemistry of the processes—behaviour of carbon, silicon, sulphur, phosphorus, manganese. Deoxidizers, and deoxidation. Grain size control. Modifications of the process ; Campbell, Bertrand Thiel, Talbot, Monell. Duplex and triplex processes. Brief description of the production of alloy-steels in the open-hearth furnace.

Electric Furnace Processes.—Types of furnaces—arc, resistance, combined arc-resistance, induction H.F. Design of representative furnaces of each type. Acid and basic linings. Conductive and non-conductive hearths.

Uses of electric furnaces. Refining of crude molten steel from Bessemer or open-hearth furnaces. Utilization of raw scrap. Cast iron—synthetic and semi-synthetic.

Production of alloy steels and ferro-alloys.

Ingots and ingot making.—Ladles—construction and manipulation. Methods of teeming. Casting in pits versus car casting. Top and bottom casting. Stripping. Soaking-pits. Production of sound ingots. Solidification of the molten steel in the mould. Principal defects in steel ingots. Rimming steel.

Manufacture of Commercially Pure Iron.—Development of ingot iron. Process of manufacture. Properties and uses.

Electrolytic Iron.—Brief survey of the production methods. Uses of this material.

(10) Non-Ferrous Metallurgy (Extraction)

Candidates will be required to show a reasonably detailed knowledge of the extraction and refining of aluminium, copper, gold, lead, magnesium, mercury, nickel, silver, tin, and zinc in accordance with the items set forth below.

1. *Ores.*—Composition and economic value. Location of the chief ore bodies and the principal extraction plants. Relative importance of the metals both as to tonnages and values.

2. *Preparatory Treatments.*—Mineral dressing and its effect on subsequent treatment. Special methods of preparation (e.g., purification of bauxite, sulphating roasting, etc.). Calcination, roasting and sintering ; principles, operation and control. Utilization of roaster gases.

3. *Smelting.*—Principles of smelting oxide and sulphide ores. Fluxes, slags and their composition, properties and classification. Fuels employed. Design and essential features of shaft and reverberatory furnaces. Lining and fettling. Control of slag attack. Operating details. Furnace products and their approximate composition. Dust and fume collection. Disposal and utilization of waste products and utilization of waste heat.

4. *Distillation and Gasification.*—Physical chemistry and operating details of the processes. Retort furnaces and other appliances used. Condensers and decomposers.

5. *Wet Methods of Extraction*.—Chemistry of the processes. Solvents. Sulphating roasting. Leaching plant and appliances. Sand, sand and slime and all-sliming treatments. Counter-current treatments. Filtration. Precipitation by reaction, displacement and electrolysis. Control of solutions. Metal recovery.

6. *Refining*.—Principles and scope of fire refining treatments. Bessemerising, liquating, drossing, scorification, cupellation and oxidation. Appliances used. Electrolytic refining. Retreatment and recovery of by-products. Casting to market shape.

7. *Electrolysis of Fused Electrolytes*.—General principles. Purification of the constituents of the bath. Construction and operation of the furnace. Control of the composition of the electrolyte. Manufacture of electrodes.

8. *Secondary Metals*.—Sources of scrap metal ; sorting ; methods of treatment ; recovery and purification.

9. *Metallurgical Calculations*.—Calculation of furnace charges ; composition of products ; thermal balance sheets ; etc.

(II) Physical Metallurgy II

The constitution of ternary and more complex alloy systems : interpretation of equilibrium diagrams.

Tensile testing machines, extensometers, autographic recorders. Calibration of machines and instruments. Stress-strain curves. Elastic and plastic deformation : strain hardening. Effects of dimensions of test-pieces, notches and rate of loading on results of tensile tests.

Torsion, shear and bending tests.

Hardness tests : Brinell, Vickers, Rockwell, scleroscope and pendulum tests : micro-hardness tests.

Notched bar impact tests, Izod and Charpy. Significance of results.

Relations between time, temperature and mechanical properties. Strain ageing and recrystallization. Effects of temperature and rate of loading. Creep and creep tests.

Fatigue tests. Machines used. Cycles of stress. Endurance limits. Effects of changes of section and surface condition.

Consideration of results of mechanical tests in relation to design and acceptance.

Non-destructive testing : radiographical, magnetic, electrical, super-sonic and fluorescent liquid methods.

Properties of molten metals and phenomena associated with melting and casting. Causes and effects of gas evolution : methods of prevention. Solidification of metals in moulds. Types and causes of segregation. Shrinkage cavities. Effect of hot and cold working on distribution of inclusions and other defects in cast metals.

Effect of heat treatment on the constitution, microstructure and properties of carbon steels, oil-hardening and air-hardening alloy steels, carburized steel, stainless steels and high-speed tool steels. The constitution and microstructure of nitrided steels. Isothermal transformations. Methods of assessing the hardenability of steel.

The mechanism of age hardening. Light alloys and other important alloys in which it occurs. Related phenomena including quench and strain ageing and temper brittleness.

“ Modification ” of alloys : mechanism and effects.

Corrosion of metals and alloys ; theoretical and practical aspects. Protection against corrosion by painting, anodizing, tinning, galvanizing, spraying and electro-deposition. Corrosion-resisting alloys, ferrous and non-ferrous. "Clad" metals. Stress corrosion. Corrosion fatigue.

High-temperature oxidation of metals. Mechanism of oxidation. Rate of oxidation in relation to time and temperature. Heat resisting alloys.

Internal stresses in cast and wrought metals : causes, effects, detection, relief. Season cracking.

Preparation, structure, properties and uses of "powder metallurgy" products.

Practical Work

Mechanical testing : tensile, hardness, impact, fatigue.

Effects of heat treatment on the mechanical properties and micro-structure of carbon steels and alloy steels of the oil-hardening and air-hardening types. Microstructure of alloy cast irons, high-speed steels, stainless steels, carburized and nitrided steels, aluminium alloys, magnesium alloys and powder-metallurgy products. Welded joints.

Failures in ferrous and non-ferrous alloys.

(12) Advanced Metallurgy

(a) Theory

Questions in this paper will cover the whole range of the subject—Non-Ferrous Extraction (including Mineral Dressing and the metals not listed in Syllabus No. 10), Ferrous Metallurgy (including the Physical Metallurgy of Iron and Steel) and Physical Metallurgy (including Ferrous and Non-Ferrous Metals). The standard demanded will be higher than that required for other papers. A wide choice of questions will be allowed so that, should a candidate so desire, he may confine himself to one of these major branches. Candidates will be expected to be conversant with the more important developments of metallurgy published in recent technical literature.

(b) Practical

Candidates will be provided with samples and/or data from which they will be required to deduce technical information which must be embodied in a suitably worded report. They will, so far as is possible, be allowed access to such literature as they may require and they must be prepared to discuss their problems with the presiding examiners. Should a candidate wish his practical test to be restricted to one of the branches mentioned above, he should **when applying for approval of Candidature** for the Part III examination make a statement to this effect and name the branch in which he wishes to be examined.

MASTER OF SCIENCE (ENGINEERING), DOCTOR OF PHILOSOPHY AND DOCTOR OF SCIENCE (ENGINEERING)

Candidates who have obtained the Degree of B.Sc. (Engineering) in Metallurgy will be permitted to proceed to the M.Sc. (Eng.), Ph.D. and D.Sc. (Eng.) Degrees in accordance with the regulations in Engineering for External Students, which may be obtained on application to the External Registrar.

**INSTITUTIONS RECOGNIZED FOR THE PURPOSES
OF THE B.Sc. (ENGINEERING) DEGREE IN
METALLURGY**

1. Recognized for both the Internal and External Degrees.

Imperial College (Royal School of Mines).

Battersea Polytechnic.

Sir John Cass College.

2. Recognized for the External Degree only.

Birmingham, College of Technology.

Bradford, Technical College.

Glasgow, Royal Technical College.

Manchester, Municipal College of Technology.

Middlesbrough, Constantine Technical College.

Rotherham, College of Technology.

Wednesbury, County Technical College.

UNIVERSITY OF LONDON



REGULATIONS FOR DEGREES IN ECONOMICS AND POLITICAL SCIENCE (OLD REGULATIONS) for External Students

For examinations to be held up to 1954 only. Regulations for examinations to be held under the new scheme are published separately.

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a "Blue Slip" which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Candidates for the Degree of Bachelor of Science (Economics) as External Students are required to satisfy the minimum University entrance requirements, to have been registered as External Students preparing for the Degree of B.Sc.(Econ.), and to pass the Intermediate and Final Examinations.

The standard of the Final Examination is that which would normally be required of a whole-time student after a course extending over three academic years after completing the minimum University and Faculty Entrance requirements.

B.Sc. (ECONOMICS) EXAMINATION

(Old Regulations)

Revised Regulations and Syllabuses have been approved to be brought into force as follows—Part I in and after 1951. Part II in and after 1952. Details may be obtained on application to the External Registrar. Examinations under the existing regulations will be held up to and including 1954.

The examination is common to Honours and Pass candidates. Successful candidates will be awarded First or Second Class Honours or a Pass Degree. The Second Class Honours list will be sub-divided into Upper and Lower Divisions. Candidates who have obtained the Degree of B.Sc. (Econ.), whether Pass or Honours, are not permitted to re-enter with a view to improving their class.

A candidate who obtained a B.Sc. (Econ.) Pass Degree prior to 1924 will be permitted, on one occasion only, to re-enter with a view to Honours ; but the name of any such candidate, if he fails to obtain Honours, shall not appear on the Pass List.

QUALIFICATIONS FOR ADMISSION

To be admitted to the B.Sc.(Econ.) Examination each candidate must (a) have been registered as an External Student preparing for the Degree of B.Sc.(Econ.), (b) have passed or been exempted from the Intermediate Examination in Science (Economics) at least one academic year previously, and (c) have obtained approval of candidature for the B.Sc.(Econ.) Examination as an External Student.

DATE OF EXAMINATION

The examination shall take place once in each year and will commence on the first Thursday after 5 June.

APPROVAL OF CANDIDATURE

Candidates should normally apply for approval of candidature during the period October-December of the year next but one preceding that in which they propose to take the examination and not later than 1 December. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 1 December, application may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 21 December. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 January and the candidate list will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—	£	s.	d.
Each entry to whole examination	12	12	0
Supplementary subject	2	2	0
Foreign language alone		10	6

Fees paid between 1 September, 1949 and 1 September, 1952, for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September, 1952 and 1 September, 1956; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations, p. ix).

SCHEME OF EXAMINATION

1. The examination shall be conducted in the main by means of printed papers; but the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

2. Candidates shall be examined in the following :—

I Economics

- | | |
|--|---------------|
| (a) Principles of Economics | } two papers. |
| (b) Applied Economics | |
| (c) Economic History since 1815—one paper. | |

II Alternative Subjects

Two of the following alternative subjects, in each of which the examination will consist of one paper.

- (1) English Constitutional History since 1660.
- (2) Comparative Social Institutions.

- (3) Social Philosophy.
- (4) Political History of the Great Powers from 1815.
- (5) Statistical Method.
- (6) Elements of English Law.
- (7) Political and Social Theory.
- (8) Scientific Method.
- (9) International Law.

Candidates may offer any two of the Alternative Subjects, except that candidates offering International Relations must offer (9) International Law and one other alternative subject.

III Special Subject

One of the following special subjects in each of which the examination will consist of three papers :—

- (i) Economics, descriptive and analytical.
- (ii) Economic History (Modern).
- (iii) Economic History (Medieval).
- (iv) Government.
- (v) Sociology. One paper on the Theories and Methods of Sociology, and one each on any two of the following :—
 - (a) Psychology.
 - (b) Ethnology.
 - (c) Social Economics.
 - (d) Social Institutions.
- (vi) Banking, Currency and Finance of International Trade.
- (vii) Transport and International Trade.
- (viii) Geography.
- (ix) Statistics, including Demography.
- (x) Industrial Law.
- (xi) Commercial Law.
- (xii) History of English Law.
- (xiii) International Relations.
- (xiv) Social Anthropology.

IV Essay

[One paper.] The essays will be of a general character *not* having particular reference to the special subjects, and there will be a choice from among not more than five or six subjects.

V Language

3. One paper will be set requiring translation of passages from French, German and Italian texts into English. The passages will be such as all candidates might be expected to meet in the course of their general reading for the degree. Candidates must select *two* of these languages and translate *one* passage only from each.

4. The use of dictionaries will be permitted in the examination, which is for pass purposes only and does not count towards Honours.

5. A candidate who satisfies the examiners in only one of the two languages shall be credited with that language, and be required to take one language only at any future attempt. One and a half hours will be allowed for translating the passage in that language.

6. Any candidate whose native language is not English, French, German or Italian may, if he wishes, offer in place of the translation paper in one foreign language a test in English, which shall include précis-writing and questions on the contemporary usage of the English language. In the case of bi-lingual students, and in any other case of doubt, the matter shall be referred to the Principal, whose decision shall be final.

7. Candidates may, if they so desire, enter for examination in either or both of the two languages at any Final Examination held during the period of their registration for the Intermediate and/or Final Examination. Candidates who enter for the entire examination and, though failing in the examination as a whole, nevertheless satisfy the examiners in the languages paper, will on re-entry be exempted from the languages paper.

8. Candidates who enter for the entire examination and, although failing in the language paper, satisfy the examiners in the remainder of the examination, may be referred in the language or languages in which they have failed. Such candidates will be informed in confidence of the Class which they have obtained in the remainder of the examination and be warned that the Degree cannot be conferred until they have completed the examination by passing on a subsequent occasion in the language or languages concerned, and otherwise complied with the Regulations.

9. All answers to examination questions shall be written in English unless instructions are given to the contrary.

EXEMPTIONS

No exemptions are given from this examination in whole or in part except on the results of examinations of this University, as follows :—

1. Candidates who have passed or been exempted from Intermediate Arts, Science (Economics) or Commerce with French, German or Italian shall be exempted from examination in such language or languages at B.Sc. (Econ.).

2. A candidate who has passed or been exempted from Intermediate Arts or Commerce with English will be exempted from further examination in that language at B.Sc. (Econ.) provided that his native tongue is not English, French, German, or Italian.

SUPPLEMENTARY SUBJECTS

Candidates who have passed the B.Sc. (Econ.) Examination are admissible for examination in one or more supplementary subjects.

THE GERSTENBERG STUDENTSHIP IN ECONOMICS

The Gerstenberg Studentship in Economics will be awarded on the results of the B.Sc. (Econ.) Examination.

For full particulars see the Scholarships Pamphlet.

TIME TABLE

The examination will be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 8 August the External Registrar shall publish a provisional list of the candidates who shall have passed, arranged in alphabetical order in each of the four categories, First Class Honours, Second Class Honours (Upper Division), Second Class Honours (Lower Division), and Pass.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the B.Sc. (Econ.) Examination who have completed more than half of the examination are eligible to apply for an Aegrotat Degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher degree on complying with the Regulations for such degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists cannot be laid before the Senate for approval until towards the end of October.

2. A diploma for the Degree of B.Sc. (Econ.) under the seal of the University shall be delivered to each successful candidate.

A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are confined to those who were awarded a degree during the preceding year.

SYLLABUSES**I Economics****(a) Principles of Economics**

The principles of economics, including theories of population, production, value, distribution, money and banking, and international trade, and with special reference to their bearing upon current problems.

Some knowledge of statistical findings in their relation to economic theory will be expected.

(b) Applied Economics

Practical economic problems of contemporary interest, including :—
Long and short term capital market. Monetary systems. Foreign exchange and international trade. Economic problems of distribution of commodities : organized markets, wholesale and retail trade. Machinery for collective purchase and sale, including labour. Industrial relations. The size of the business unit. Location and concentration of industry. Industrial combinations. Public ownership and control. Price and cost problems in industry and trade. Economic problems of transport and public utility undertakings. Public finance : the economic effects of taxes and subsidies ; public expenditure. Industrial fluctuations.

(c) Economic History since 1815

The main outlines of economic history subsequent to 1815, with special reference to the economic development of the Great Powers, including the United States.

II Alternative Subjects**(1) English Constitutional History since 1660**

A brief survey of the struggles of the seventeenth century ; an examination of the Revolution Settlement ; and the general political history of England down to 1914, paying special attention to the following points : the power of the Crown ; changes in the composition, constitutional powers and influence of the two Houses of Parliament ; the evolution of the Cabinet ; the rise of the office of Prime Minister ; the history of political parties ; the growth and expression of public opinion.

The syllabus does not cover the economic and social history of the period.

(2) Comparative Social Institutions

Formation and growth of communities ; kinship and inter-marriage ; basis of custom and law ; development of political authority and responsibility ; social differentiation ; caste and class ; rise and decay of slavery and serfdom ; property and economic organization ; relations between communities and their bearing on internal structure ; intellectual and moral conditions of social development.

(3) Social Philosophy

Fundamental concepts of the study of society ; the philosophical and scientific points of view. Biological and psychological factors. Ethics as applied to social relationships. The basis of rights and duties. Personality and the common good. The meaning of social harmony. The State and the community. The basis of the rights of property.

(4) Political History of the Great Powers from 1815

Prelude. The Vienna Settlement, 1815.

The progress of the revolution :—(a) Political : Progress towards democracy in France, England, Germany and Russia. (b) Social and economic : movements against economic inequality in Austria-Hungary and Russia ; the rise of labour and socialist movements. (c) Nationalist movements in Italy, Germany, Austria-Hungary and the Balkans.

International relations of the great States of Europe. The attempt at government by Congress (1815–1825) and later action of the Concert of Europe. The reaction of the nationalist movements on international affairs. The evolution of the Eastern Question. The two camps (1870–1914). Epilogue : The Versailles Settlement.

The imperialism of the West and its reactions with the new nationalism of the East. The expansion of Russia in Asia. The relations of the Great Powers with China and Japan. The partition of Africa.

The United States of America : Internal political development and relations with Europe. Latin America and Eastern Asia.

(5) Statistical Method

1. Collection of data, definition, and tabulation. Statistical groups. Arithmetic average, mode, median, geometric mean, mean and quartile deviation. Statistical series in time. Trend and fluctuation. Weighted averages. Index Numbers. Simple methods of measuring correlation.

2. Principal sources of statistics in the United Kingdom relating to population, production, consumption, commerce, prices, wages, income, employment.

3. (a) *More Advanced Statistical Methods*, involving mathematics of the standard required for the paper in Mathematics at the Intermediate Examination in Economics. Elementary mathematical treatment of variation and error (especially in their application to averages), sampling, description of groups and series, and correlation, in relation to economic and social investigations. Methods of interpolation.

(b) Further sources of economic, social, administrative, financial, and transport statistics in the United Kingdom ; e.g., statistics published by central and local government organizations, public corporations, marketing boards, trade associations, trade unions, banks, transport undertakings, commercial and industrial concerns, journals, etc.

A knowledge will be expected of all three parts, which carry equal value in the Examination, but in Part 3 candidates may confine themselves to either (a) or (b).

[*Note.*—Logarithm Tables will be provided by the University, and Slide Rules may be brought to the examination.]

(6) Elements of English Law

The nature and origins of Law. The system of English Law : Statute Law ; Common Law ; Equity ; Judicial Precedents ; Customs. English legal institutions : the Courts of Law ; the Legal Profession ; the principles of Legal Procedure and Evidence. Legal persons, natural and artificial. The subject and his rights and duties in the State. Elements of the Law of Contract and Tort and of Criminal Law. The nature of proprietary rights (ownership, tenancy, possession, trusts) ; outline of the principal classes of property and of modes of disposition (sales, lease, mortgage, pledge, wills and settlements, bankruptcy).

The candidate will be required in addition to show special knowledge of *either* (a) the Elements of Constitutional Law, *or* (b) the Elements of the Law of Contract.

(7) Political and Social Theory

The institutions and functions of the modern state. The history (in general outline) of the main theories of social and political Philosophy since Hobbes in their relation to the working of British political institutions.

(8) Scientific Method

Comparison between Science, History, and Philosophy. Comparison of Economics and Sociology with Physics and Biology. Relations between Economics, Psychology, Ethics, Politics, and Sociology. Description and explanation. Principles of classification and definition. The comparative method. The logic of statistical method. The inductive methods and their application to economic and sociological investigations. The function of hypothesis in induction, its application and verification. The use and misuse of analogy.

(9) International Law**A General Principles**

1. *The Foundations of International Law.*—International Law and Society. The Sources of International Law. International and Municipal Law. The Dominion of International Law. Development and Science of International Law.

2. *International Personality.*—The Subjects of International Law. The Principles of Sovereignty and State Equality. Recognition. Representation of States. International Persons Other than States. Continuity of States and State Succession.

3. *State Jurisdiction.*—General principles. Territorial Jurisdiction. Limitation of Territorial Jurisdiction under International Customary and Conventional Law. Personal Jurisdiction.

4. *Objects of International Law.*—Territory. Land Frontiers. Maritime Frontiers and claims to the Continental Shelf. The High Seas. Individuals. Business Enterprises and Ships.

5. *International Transactions.*—International Treaties. Unilateral Acts and Quasi-Contractual Obligations. International Torts.

6. *War and Neutrality.*—Measures Short of War. State and Effects of War. Warfare on land. Military Occupation of Enemy Territory. Maritime Warfare. Warfare in the Air. Penalties for the Violation of Rules of Warfare. Neutrality. Civil War and Belligerency. Termination of War.

B The Law of International Institutions

Judicial International Institutions, with special reference to the History of International Arbitration, to the Permanent Court of International Justice and to the International Court of Justice. Administrative International Institutions (e.g., the Universal Postal Union, Unesco or the International Bank for Reconstruction and Development). Quasi-Legislative Institutions, with special reference to the International Labour Organization. General Purposes Institutions (with special reference to the United Nations and Institutions within the framework of the United Nations).

III Special Subjects**(i) Economics, descriptive and analytical**

Economic theory and its history since 1750, including theories of population, production, value, distribution, and international trade, and with special reference to its bearing upon current problems. Forms of industrial organization. Combination and monopoly. Industrial fluctuations.

Some knowledge of statistical findings in their relation to economic theory will be expected.

(ii) Economic History (Modern)

Economic History (Modern), with special reference to England after 1485 and including particular study of *either* the period 1485–1603 *or* the period 1830–1876. **Candidates must state, when applying for approval of candidature which optional period they select.**

The examination will consist of two papers on General Economic History after 1485, and one paper on English Economic History of the period *either* 1485–1603 *or* 1830–1876. Candidates will be required to show a knowledge of the chief sources of English Economic History, especially in connection with the special period chosen.

(iii) Economic History (Medieval)

Economic History with special reference to England down to 1485, and including particular study of the period 1377-1485.

The examination will consist of two papers on General Economic History to 1485, and one paper on English Economic History 1377-1485. Candidates will be required to show a knowledge of the chief sources of English Economic History, especially in connection with the period 1377-1485.

(iv) Government

The Constitution and Administration of Great Britain and the Dominions and a comparison thereof with the governmental systems of other countries, in particular the U.S.A., France, Germany, and Switzerland.

The history of political ideas from Hobbes to the present time in outline.

(v) Sociology

The examination shall consist of three papers, one on :—

Theories and Methods of Sociology

The development of Sociology since Comte. The influence of biology on Social Theory. The rôle of psychology in sociological explanation. The use of anthropological and historical data in sociology. The value and limitations of the Comparative method. The methods employed in investigating contemporary social conditions. The classification of social aggregates and institutions and the analysis of social processes. The concept of culture and civilization. Theories of social development, arrest and decay. The nature of sociological generalizations.

And one each on any two of the following :—

(a) Psychology

The psychological standpoint. Comparative Study of Mental Structure : (a) in animals and man, (b) in child and adult, (c) in primitive and advanced peoples. The psychological basis of social institutions : (a) ideas of moral and political obligations ; (b) nature and development of moral faculty, psychology of sympathy, self-love, moral sense, conscience, the idea of personality ; (c) psychology of responsibility—analysis of will, desire, impulse, motive, intention. Psychological element in (a) aesthetic, (b) scientific, (c) religious development.

(b) Ethnology

The physical, mental, cultural and social characteristics of the main varieties of mankind. The present geographical distribution of races and peoples, and their former wanderings. The antiquity of man ; the physical characteristics of prehistoric peoples and the evolution of their culture. A detailed acquaintance with a selected continent, or area, comprising a knowledge of the main social groups in the region selected, their environment (physical and biological), occupation, property, culture, social structure, religion, expansion, and their influence upon one another.

(c) Social Economics

Development of economic theory in relation to social theory ; contemporary economic conditions in the United Kingdom ; wages and the standard of life ; housing and sanitation ; provision for children, the sick, the aged : unemployment, trade unionism ; co-operation ; state regulation of industrial conditions ; welfare institutions ; social insurance.

(d) Social Institutions

Sociology in its relations to biology and psychology ; the principle of evolution applied to social phenomena. Forms of social organization : (a) The family—maternal and paternal descent—power of the head of the family ; joint and individual property ; regulation of marriage ; position of women ; (b) Society—the clan and tribe : monarchy, feudalism, the City State ; the modern State ; Federal Government. The maintenance of social order : the blood feud, retaliation, compensation, primitive courts and processes, the oaths and the ordeal, growth of public justice and rational procedure, responsibility, punishment and prevention of crime. The social structure : slavery, serfdom, free labour and industrial co-operation, caste and class distinction, civil and political equality. Religious and other beliefs in their bearing on social relations ; influence of magic, animism, ancestor-worship, polytheism, the world religions, on social morality ; antithesis of temporal and spiritual powers. Those parts of the syllabus which are included also in the syllabus in Comparative Social Institutions to be treated in greater detail.

(vi) Banking, Currency and Finance of International Trade

(a) Monetary theory, i.e., the nature and definition of money ; the classification of monetary systems ; monetary value and the theory of price changes ; problems of monetary organization.

(b) Banking theory, e.g., the functions and significance of banking including the main theoretical problems arising out of the organization of banking systems ; Central Banking and the working of the Money Market.

(c) Monetary history and organization, i.e., the development of monetary and banking institutions in Great Britain, especially in the period 1600–1914. The organization of banking and currency institutions in the British Empire, Europe, North America, and the principal countries of South America and the Far East.

(d) Finance of international trade : the theory and practice of the foreign exchanges and of the Stock Exchange, including the theory of international trade in its relation to the development of monetary, and especially foreign exchange, theory.

(vii) Transport and International Trade

(a) The history of railways generally, with special reference to the United Kingdom, and relations between the railways and the State. The history of roads of England and Wales from the sixteenth century, of France from Colbert, and of road transport from the beginning of the eighteenth century. History of canals and navigable waterways from the middle of the eighteenth century, with special reference to Great Britain, France, Belgium, and Germany, and North America. History of sea transport from the eighteenth century.

Organization of railways and railway finance—relation to the State—relations with public—relations to one another—administrative organization—railway clearing houses. International organization.

Organization of roads and road finance—control by the State over road vehicles and road users—various types of road transport and their organization.

Organization of inland waterways and their finance—relation to the State—various types of inland waterway—organization of maintenance and operation.

Organization of sea transport—State control of ships and shipping—international arrangements—liners—shipping conferences—the ship and its operation—marine insurance—port, dock, and harbour authorities—organization of dock work.

Rates, fares, and charges in theory and practice—monopoly and competition—discrimination in charges. Taxation and subsidies. Production of transport and its costs. Statistics measuring production and efficiency. Elements of law of carriage.

(b) The influence of transport on the distribution of population and industries. Commercial policy and growth of the trade of the chief commercial nations, more particularly the United Kingdom, since 1870. The supply and marketing of the chief commodities entering into international trade. Distribution and organization of trade routes and development of commercial centres. The influence of markets and market organization on the direction and character of trade. Commercial statistics.

[*Note.*—Paper 1 will be devoted to Transport and Paper 2 to International Trade ; Paper 3 will be divided into two sections, one on Transport and one on International Trade, either of which may be taken at the option of the candidate.]

(viii) Geography

The regional, historical and economic Geography of the British Isles.

The regional and economic Geography of continental Europe ; France and Germany to be considered in greater detail than the rest of Europe.

The regional and economic Geography of *either* North America *or* Asia.

Either (i) A less detailed study of the regional and economic geography of one of the continents, (a) South America, (b) Africa, (c) Australia and New Zealand ;

Or (ii) The historical Geography of the Mediterranean region.

[*Note.*—Paper I will be devoted mainly to the British Isles and to general geographical principles ; Paper II to Europe excluding the British Isles ; and Paper III to the remainder of the syllabus.]

(ix) Statistics, including Demography

The subjects described in the syllabus in Statistical and Scientific Method, Parts I and II, carried to a further extent. Methods of obtaining data and the logical process of drawing inferences therefrom ; the common fallacies of interpretation. General principles of representation of statistics by mathematical formulae. The deduction of the curve of error from the binomial. The method of fitting by moments. The elementary theory of correlation, including the case of three variables. Interpolation by finite differences and the simple theory of the life table. Such mathematics, including the theory of probability, as are necessary for the foregoing. Applications, mainly to the official statistical publications of the United Kingdom and to other accessible publications on industrial and demographical subjects. Where detailed knowledge of special subjects is required, a choice of questions will be allowed.

[*Note.*—Logarithm Tables will be provided by the University, and Slide Rules may be brought to the examination.]

(x) Industrial Law

General principles of the law of Employers and Workmen. Statutory conditions of employment in factories, workshops, mines, and shops, and on railways and ships. Employers' Liability and Workmen's Compensation. The law of Trade Unions. Friendly Societies, National Health and Unemployment Insurance. Trade Boards. The Truck Acts. The main outlines of labour legislation in the Overseas Dominions, and in the United States of America, France and Germany.

(xi) Commercial Law

The history of the Law Merchant. General principles of the law of contract. The law relating to mercantile contracts (sale of goods ; negotiable instruments ; banking ; guarantee ; carriage of goods by land and sea ; insurance). The law relating to mercantile persons (principal and agent ; partnerships ; companies). The law relating to mercantile property (goodwill ; patents, trade marks and designs ; mortgages and pledges of goods and choses in action ; mercantile liens ; bankruptcy).

(xii) History of English Law

(1) *Property*.—The general conception of property implicit in English Law in its several stages of development. The communal village. The manor. The divisions of the subject-matter of property : (a) land, (b) movables, (c) "things in action," and the rules governing the creation, devolution, and alienation of property in each. Extent and nature of proprietary rights. Creation of derivative rights in (a) land (life estates, leaseholds for years, mortgages, "incorporeal hereditaments," surface and mineral rights, etc.) ; effect of this on agricultural and rural developments. (b) Movables (pledges, liens, bailments generally). (c) "Things in action" (tardy recognition by English courts). Influence of the Law Merchant. Growth and legal recognition of negotiable instruments. New forms of "things in action" (shares, stock, debentures). Growth of Company Law. Unwillingness of the Common Law to admit the transfer of "things in action."

(2) *Contract*.—Absence of conception in early stages of English Law. Popular institutions of pledge and warranty. Ecclesiastical doctrine of *laesio fidei* and its reception by the King's Courts. Appearance of the formal contract. Gradual evolution of the "simple" (formless) contract. Curious way in which it arises in English Law and width of doctrine accepted. The theory of "valuable consideration." Development of the "contractual mind."

Doctrines which have specially affected the English law of contract. The ecclesiastical doctrine of usury. The feeling against monopoly and the struggles of the sixteenth and seventeenth centuries. The doctrine of "restraint of trade." The doctrine of "public policy." The doctrine of "freedom of contract."

(3) *Employer and Employed*.—Co-operative and customary labour on the land. The Black Death and the Statute of Labourers. Emergence of the "free labourer." Guilds and "conspiracies." The Combination Laws. Breakdown of the medieval system and substitution of contract labour for status labour. Repeal of the Combination Laws. The doctrine of "common employment." Employers' Liability Acts. Failure of the Law to reach a system of collective bargaining. Beginnings of a new system of State regulation of wages. Workmen's Compensation Acts.

(xiii) International Relations**(a) International History.**

Diplomatic history of the nineteenth and twentieth centuries, with special reference to the evolution of international political organizations.

(b) International Relations (General).

Description and analysis of the relationships, political, economic, and financial, between Governments as well as peoples; the causes and occasions of international conflicts and the methods and procedures for their peaceful solution.

(c) International Institutions.

The development and working of diplomatic and consular machinery; the growth and forms of international technical co-operation; the origins, structure and functioning of the League of Nations, International Labour Organization and Permanent Court of International Justice; present-day problems of international organization.

(xiv) Social Anthropology

The syllabus will be as follows :—

Scope and history of social anthropology; methods of research, theories of culture and social structure; processes of social change, relation of culture to race and to environment.

Territorial organization, kinship grouping and social organization in terms of sex and age, ceremonies at critical points of the life cycle, simple political, legal and economic systems, values and sanctions in morality and law, indigenous education; magical and religious ritual and beliefs, cult societies, guilds and other specific forms of association.

Candidates will also be required to show special knowledge of the literature dealing with the simpler cultures of *one* major area. Approved areas are :—

(a) Eastern Africa, (b) Central Africa, (c) Western Africa, (d) Southern Africa, (e) America, north of Mexico (Amer-Indian and Eskimo cultures), (f) India (tribal cultures), (g) South-Eastern Asia, (h) Pacific Islands.

The examination will consist of *three papers*, viz. :

- I. Comprising two parts : a section of general questions, and a section of questions on the special area as selected above.
- II. Comprising questions mainly on social, political and economic structure.
- III. Comprising questions mainly on law, morality, magic and religion.

MASTER OF SCIENCE (ECONOMICS)

Regulations for the Degree of M.Sc. (Econ.) are included in the separate pamphlet for examinations under the Revised Regulations.

DOCTOR OF PHILOSOPHY

Regulations for the Degree of Ph.D. are contained in a separate pamphlet which may be obtained on application to the External Registrar.

DOCTOR OF SCIENCE (ECONOMICS)

Regulations for the Degree of D.Sc. (Econ.) are included in the separate pamphlet for examinations under the Revised Regulations.

UNIVERSITY OF LONDON



REGULATIONS FOR DEGREES IN ECONOMICS AND POLITICAL SCIENCE (REVISED REGULATIONS) for External Students

Regulations for the B.Sc. (Econ.) and B.Com. Examinations to be held under the Old Regulations up to and including 1954 are published in separate pamphlets.

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations, which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1
September, 1953

INTRODUCTORY NOTE

1. Candidates for the Degree of Bachelor of Science (Economics) as External Students are required to satisfy the minimum University and Faculty entrance requirements, have been registered as External Students preparing for the Degree of B.Sc.(Economics), hold qualifications as set out below for Direct Entry to the Final Examination, or pass the Preliminary Examination, and to pass Parts I and II of the Final Examination.

2. The standard of the examination in Part I is that which would normally be required of a whole-time student after a course extending over two academic years subsequent to completing the Direct Entry requirement or the Preliminary Examination. The standard of the examination in Part II is that which would normally be required of a whole-time student after a course extending over one academic year subsequent to completing the Part I examination.

FACULTY REQUIREMENTS

Candidates who have satisfied the minimum entrance requirements of the University are deemed to have satisfied the requirements for registration as a student in the Faculty of Economics.

DIRECT ENTRY TO FINAL EXAMINATION

(1) Students who have satisfied the minimum University and Faculty entrance requirements and who fulfil the conditions given below may apply for registration as External Students and for approval of candidature for Part I of the Final Examination in Economics without having previously satisfied the Examiners at the Preliminary Examination.

(2) Applications for direct entry to Part I of the Final Examination will be considered in respect of students who have

either (i) passed, at a General Certificate of Education Examination or Examinations conducted by one of the approved University Examining Bodies, at the Advanced Level in three subjects corresponding to subjects at the Intermediate Examination in Arts or the Preliminary Examination in Economics selected from the list : Economics (including Economic History) ; Geography ; History ; English ; Pure Mathematics ; British Constitution ; *one* of the following languages : French ; German ; Italian ; Russian ; Spanish ;

or (ii) obtained a Higher School Certificate recognized by the Ministry of Education and have, on one and the same occasion, passed at main subject standard in three subjects corresponding to subjects at the Intermediate Examination in Arts or the Preliminary Examination in Economics selected from the list : Economics (including Economic History) ; Geography ; History ; English ; Pure Mathematics ; British Constitution ; *one* of the following languages : French ; German ; Italian ; Russian ; Spanish ;

or (iii) obtained an approved professional qualification.

(3) In 1953 and subsequent years the fees for entry to the Final Examination will be increased, but a candidate who, between 1 September 1949 and 1 September 1952 paid the fee of £6 6s. od. for complete exemption from the Preliminary Examination will be entitled to credit this against the fees required for entry to Parts I and II of the Final Examination taken between 1 September 1952 and 1 September 1956.

REGISTRATION

Candidates for the Degree of Bachelor of Science (Economics) are required to satisfy the minimum University and Faculty Entrance requirements and to have been registered as External Students preparing for the Degree at least three academic years before entry to Part II of the Final Examination. Candidates should normally register during the period September-December in the year next but one preceding the year in which they propose to enter for Part I of the Final Examination.

PRELIMINARY EXAMINATION IN ECONOMICS

QUALIFICATIONS FOR ADMISSION

To be admitted to the examination each candidate must (a) have satisfied the minimum University and Faculty entrance requirements ; and (b) have been registered as an External Student preparing for the degree of B.Sc.(Econ.). Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced a course of study. Students for the July examination should normally apply for registration in the period October to December of the year preceding the examination, and not later than 25 February. Students for the November examination should normally apply for registration in the period January to March preceding the examination, and not later than 8 September. **Students who apply to take the Final Examination less than three academic years from the date of registration are warned that an application for late registration, with a late fee of £2 2s. will be necessary when they apply for approval of candidature for the Final Examination.**

DATE OF EXAMINATION

The examination shall take place twice in each year, and shall commence on the first Monday in July and on the fourth Monday in November (in London only). The syllabuses for the November examination are the same as those for the preceding July.

ENTRY TO EXAMINATION

The candidate list for the July examination will be opened on 11 February. Entry forms will not be despatched by post from the University after 18 March, and the candidate list will be closed on 25 March.

The candidate list for the November examination will be opened on 27 August. Entry forms will not be despatched from the University after 1 October, and the candidate list will be closed on 8 October.

Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole examination	6	6
Supplementary subject	2	2
<i>Exemption in virtue of another examination :—</i>		
Complete exemption	No fee	
Partial exemption (per subject taken)	2	2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the July examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix). In the case of the November Examination no refund can be made under Section 5 of those regulations.

SCHEME OF EXAMINATION

1. The examination will be a pass examination only. Candidates will be examined in three subjects as follows :—

- (1) Economics (including English Economic History) 2 papers
- (2) Geography 2 papers
- (3) *either*
one of the following languages :—
 French, German, Italian, Russian,
 Spanish 2 papers and an oral
or Pure Mathematics 2 papers
or British Constitution 2 papers

2. The examination will be conducted by means of printed papers, but the examiners shall not be precluded from putting oral questions to any candidate.

3. No candidate shall be allowed to pass unless he has shown a competent knowledge in each of the subjects selected, and in the case of a foreign language unless he satisfies the examiners in an oral examination which shall include a test in dictation.

4. All answers to examination questions shall be written in English unless instructions are given to the contrary.

5. A candidate who has passed the Preliminary Examination in Economics will not be permitted to re-enter except as provided under the Regulations for Supplementary Subjects.

SUPPLEMENTARY SUBJECTS

Candidates who have passed or been exempted from the Preliminary Examination in Economics may enter for examination in one or more supplementary subjects.

EXEMPTIONS

In virtue of Higher School Certificates and the General Certificate of Education :—

1. (a) A candidate who holds a Higher School Certificate or Certificates recognized by the Ministry of Education and who is qualified to proceed to the Preliminary Examination in Economics may apply for exemption at that examination in any subject or subjects

endorsed on his Higher School Certificate or Certificates at main subject standard provided that the subject(s) correspond to those which may be offered at the Preliminary Examination in Economics.

(b) A candidate who has not qualified for the award of a Higher School Certificate but who has been permitted to count successes gained in 1949 or 1950 in two subjects passed on one and the same occasion at main subject standard towards the minimum University entrance requirements may apply for exemption in respect of either or both of these subjects provided that they correspond to those which may be offered at the Preliminary Examination in Economics.

(c) A candidate who holds a General Certificate or Certificates of Education awarded by one of the approved University Examining Bodies and who is qualified to proceed to the Preliminary Examination in Economics may apply for exemption at that examination in any subject or subjects passed at the Advanced Level provided that the subject(s) correspond to those which may be offered at the Preliminary Examination in Economics.

(d) (i) A candidate who is required to pass in two or more subjects in order to complete his Preliminary qualification and who enters for examination at the Preliminary Examination in Economics must complete the whole examination on one and the same occasion.

(ii) A candidate may, if he so desires, complete his Preliminary qualification by passing in the required additional subject or subjects at a subsequent General Certificate of Education (Advanced Level) Examination or Examinations, provided that the subjects taken correspond with those which may be offered at the Preliminary Examination in Economics.

(iii) A candidate who is partially exempt from the Preliminary Examination in Economics will be required to pay a fee of £2 2s. per subject for a first or subsequent entry.

(iv) In 1953 and subsequent years the fees for entry to the Final Examination will be increased, but a candidate who, between 1 September 1949 and 1 September 1952 paid a fee of £6 6s. for exemption from the Preliminary Examination in Economics and who did not complete his qualification by any actual entry to that examination, will be entitled to credit this against the fee required for entry to Parts I and II of the Final Examination taken between 1 September 1952 and 1 September 1956.

(e) A candidate who is exempted from the Preliminary Examination will not be issued with a certificate of exemption, but notification will be sent to duly qualified candidates at their request that they are qualified to proceed to the External B.Sc.(Economics) Examination on complying with the Regulations in all respects.

In virtue of other examinations of this University :—

2. Graduates of this University may apply for exemption under the Advanced Student Regulations for External Students.

3. Candidates who have passed the Intermediate Examination in Economics or in Commerce under the Old Regulations, either as Internal or External Students, are entitled to exemption from the Preliminary Examination.

4. Candidates who have passed Part I or Part II of the Intermediate Examination in Economics or the Intermediate Examination in Commerce shall be exempted from the subjects of the Preliminary Examination in which they have passed at the Intermediate Examination, provided that candidates who have passed Part I of the Intermediate will be

exempted only from Paper I (Principles of Economics) of the subject Economics, and candidates who have passed Part II of the Intermediate will be exempted only from Paper 2 (English Economic History) of the subject Economics.

5. Candidates who have been referred in one subject at the Intermediate Examination in Economics or at the Intermediate Examination in Commerce shall be exempted from the subjects of the Preliminary Examination in which they have passed at the Intermediate Examination, provided that candidates who have been referred in Economics will be exempted only from Paper 2 English Economic History in the subject Economics, and candidates who have been referred in English Economic History will be exempted only from Paper 1 Principles of Economics in the subject Economics.

6. Candidates who have passed the Intermediate Examination in Arts of this University with Economics or Geography or Pure Mathematics or a language approved for the purposes of the Preliminary Examination shall be exempted from examination in the subjects in which they have so passed.

7. (a) Candidates who have passed B.A. General or Honours of this University with Economics or Geography or Pure Mathematics or a language approved for the purposes of the Preliminary Examination shall be exempted from examination in the subjects in which they have so passed.

(b) Candidates who have passed B.A. General of this University with Law, Section 1, Constitutional Laws of the British Empire, shall be exempted from examination in British Constitution.

(c) Candidates who have passed B.A. Honours of this University in History with English Constitutional History as their optional subject shall be exempted from examination in British Constitution.

8. Candidates who have obtained either the Academic or the External Diploma in Geography of this University shall be exempted from examination in Geography.

9. Candidates who have passed Intermediate Laws of this University with Constitutional Law shall be exempted from examination in British Constitution.

10. Candidates who have passed Intermediate Science of this University with Geography or Pure Mathematics shall be exempted from examination in the subjects in which they have so passed.

11. Candidates who have passed B.Sc. General or Special of this University with Geography or Pure Mathematics shall be exempted from examination in the subjects in which they have so passed.

12. Candidates who have passed Intermediate in Engineering or B.Sc. (Eng.) of this University with Pure Mathematics shall be exempted from examination in that subject.

13. Candidates who have passed Intermediate in Agriculture of this University with Economics or Pure Mathematics shall be exempted from examination in the subject in which they have so passed.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 19 August (for the July examination) and 7 January (for the November examination) the External Registrar will publish a list of the successful candidates arranged in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate, and an individual notification to each unsuccessful candidate.

3. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October for the July examination and in January for the November examination.

4. Certificates of having passed the examination will only be issued to qualified students applying for them.

5. Each successful candidate will receive a Detailed Report on his results in each subject on the following basis :—

A—Very Good Pass ; B—Good Pass ; C—Pass.

6. Each unsuccessful candidate will receive a Detailed Report on his results in the subjects in which he has failed, on the following basis :—

D—Failure ; E—Bad Failure.

7. Failure in a subject which includes a practical or oral examination indicates failure in the subject as a whole and no further information can be given regarding the candidate's performance in the various parts of the examination.

8. Detailed Result Reports will be sent to successful candidates from one to two months after the publication of the ordinary Pass List, but will be sent to unsuccessful candidates at the time when they are notified of the result of the examination.

9. Educational institutions in receipt of annual grants from public funds may apply for a statement of the detailed results of their candidates ; such applications must be accompanied by a list of the candidates' names, the name of the examination and the date at which it was taken. The results cannot be communicated until about two months after the publication of the Pass List and each institution will have communicated to it the results of those candidates only who are registered as pursuing a course of study at that institution.

SYLLABUSES

1. Economics

[Two papers.]

1. *Principles of Economics*

The Economic Structure of the United Kingdom

Population : Size, sex- and age-distribution. Geographical and occupational distribution.

Industrial Structure : Relative size of main industries, their location and organization including agriculture, coal, steel, textiles.

The Labour Market : Trade unions and collective bargaining.

International Trade : Visible and invisible imports and exports.

National Income and Output : Meaning, composition and distribution.

Public Finance : The main sources of revenue and types of expenditure.

Financial Organization : The commercial banks. The Bank of England. The capital market.

Some Elements of Economic Analysis

Division of Labour. The Factors determining average income per head. Causes of Location of Industry. Advantages of International Trade.

An outline of the functions of the price-mechanism ; supply and demand in relation to the allocation of resources.

Causes and effects of changes in demand for and supply of goods and factors. Elasticities of demand and supply. The effects of maximum and minimum prices. The incidence of direct and indirect taxes. Causes and effects of monopoly.

The nature and function of money, banks, and the foreign exchange market. The measurement of changes in the general level of prices and their causes.

2. *English Economic History*

The outlines of the economic and social development of England. The questions will deal mainly with the period from the eighteenth century to the present day, but candidates should be familiar with the nature of the open-field system of farming, with the handicraft system of industry, and with the system of foreign trade which existed before 1700. The aim of the syllabus is to enable students to disentangle the causes as well as the course of economic and social change.

Agriculture : The history of agriculture to include changes in agrarian organization and farming methods, "high farming," and agricultural adjustments in the late nineteenth and early twentieth centuries.

Industry : The transition to industrialism. Factors in industrial development—*invention and technological change, the application of science, the widening of internal and external markets, increasing productivity. Iron, coal, and textiles. The growth and extension of the factory system. Changes in the location of industry. Roads, canals, and evolution of railways. The course of railway legislation. The outline history of shipping from sail to steam. Cheap steel and the subsequent course of industrial change ; the new industries of the late nineteenth and early twentieth centuries. Industrial concentration and combination. The industrial policy of governments since the last quarter of the nineteenth century.*

Commerce and Finance : Economic problems and policy during and after the American and French Wars. The growth of the liberal economy ; the establishment of free trade. The growth of the banking system before, and after, the Act of 1844. The financing of railways, the achievement of general limited liability and the spread of joint-stock organization. The expansion of home, and the changing character of foreign trade. The growth and distribution of foreign investments. Major changes in the general price level. The alternation of good and bad times. Major changes in taxation and government expenditure. Tariff policy in the twentieth century. The economic consequences of twentieth century wars.

Social Organization : The expansion of population. Changes in the mobility of labour. The problems created by the growth of towns. The declining influence of the land-owning classes. The growth and influence of the middle classes. The growth and composition of the working-classes ; changes in their standard of living ; the history of Trade Unionism ; the Co-operative movement. Changes in the franchise and their economic consequences. The social policy of governments including the history and break-up of the Poor Law, public health and factory legislation, education, the expansion of the social services.

2. Geography

[Two papers.] Geography, with special reference to Industry, Commerce, and Politics.

To include :—

General Geography

General principles as exemplified in the world considered as a whole.

The Earth's Crust : Nature of the earth's crust. The internal and external forces modifying the crust in so far as they determine : (a) General structure and leading relief features of the continental masses and ocean basins ; (b) Types and distributions of rocks, minerals and soils.

Climate : Broad seasonal distribution of insolation, temperature, pressure, winds and rainfall, leading to a recognition of chief climate types and their associated weather conditions. (The physical conditions and movements of the oceans should be considered only in so far as they affect climate.)

Vegetation : General distribution of forest, woodland, scrub and grassland in relation to climate, soil and relief.

Major Geographical Regions : The division of the world into major geographical regions.

Human Geography : The influence of the foregoing physical factors upon the distribution of man and upon the production of food and raw materials, and the consequent development of the geographical regions.

Regional Geography

Certain regions of the world (see below) considered under the following heads : Superficial configuration together with the leading facts of the distribution of soils, rocks, and minerals of economic importance. The reaction of configuration upon air and water circulation and the resulting local climates. The river systems as related to configuration and climate. The influence of the foregoing physical factors on agricultural production and the supply of animal and vegetable products independently of agriculture. The sources of mechanical power. The distribution of population as related to the foregoing physical factors and as influencing labour supply and the value of land. The localization of industries as determined by all the foregoing factors. Transport. Trade centres and trade routes. The geographical circumstances which influence the economic and strategical position of States.

The regions to be studied are the following :—

1. The British Isles.
2. *Either* Europe *or* North America.
3. *Either* India, Pakistan and Ceylon, *or* China, *or* Japan.
4. *Either* Africa, *or* South America, *or* Australia and New Zealand.

either 3. **French, German, Italian, Russian or Spanish**

[Two papers and oral.]

In all languages the syllabus will be as follows :—

Grammar : translation : composition.

Composition will include (i) translation from English, and (ii) some form of free composition.

Set books will not be prescribed.

A commercial knowledge of the language is not required : the papers will require only a general knowledge of the language.

The oral examination will include a test in dictation.

or 3. Pure Mathematics

[Two papers.] The theory of quadratic equations. The convergence of the geometric series. Permutations and combinations, including simple applications to probability. The binomial theorem for positive integral indices. The theory of indices. The nature and use of logarithms.

The geometry of similar rectilinear figures. Mensuration of plane rectilinear figures. The angles made by planes and straight lines with one another. Mensuration of simple solid figures, including the tetrahedron, cylinder, cone and sphere (the methods of the calculus may be used where suitable). Rectangular cartesian co-ordinates applied to the straight line, circle, parabola, ellipse, and hyperbola.

Plane trigonometry up to and including the solution of triangles. Trigonometric, exponential, and logarithmic functions, and their graphs.

The definition of a derivative. Differentiation of x^n (n an integer, positive or negative), $\sin x$, $\cos x$, $\tan x$, e^x , and $\log x$. Differentiations of a sum, a product, a quotient, and in simple cases of a function of a function. Definite and indefinite integration of the above functions and of simple functions of them. Areas and volumes. Representation of equations by curves, with easy applications. Simple example on maxima and minima.

[*Note.*—Logarithm Tables will be provided by the University and slide rules may be brought to the examination.]

or 3. British Constitution

[Two papers.] The nature, sources and characteristics of the British Constitution. The separation of powers. Parliamentary sovereignty. The Royal prerogative. Constitutional conventions. The Rule of Law. The Party System. Public Opinion.

Parliament, its position, functions and powers. Parliamentary privilege and procedure. Control of national finance.

The Privy Council and the Cabinet. Committees of the Cabinet. Ministerial responsibility. The position of the Prime Minister. The principal government departments. The Civil Service. The outlines of public administration, including the various forms of control over administration. Treasury control. Control by Parliament and the Cabinet; Ministerial and parliamentary control of public corporations.

The organization and functions of the Judiciary. Administrative tribunals. Delegated legislation.

The constitution and powers of Local Authorities in England; including central control of Local Authorities and local government finance.

The British Empire and the Commonwealth of Nations: the relations of the United Kingdom with the other members. The distinctions between Dominions, Colonies and trust territories. Dominion status. The position of the Crown in the Commonwealth. Appeals to the Judicial Committee of the Privy Council.

Candidates will be expected to have some acquaintance with the chief events in the development of British Political institutions since 1832; but the emphasis of the papers will be on the working constitution of the present day. There will be opportunities for candidates to show knowledge of current constitutional affairs.

B.Sc. (ECON.) EXAMINATION

(Revised Regulations)

The B.Sc. (Econ.) Degree will be awarded to candidates who are successful in both Parts of the Final Examination. Successful candidates will receive First Class Honours, Second Class Honours (Upper or Lower Division) or a Pass Degree.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to Part I of the B.Sc.(Econ.) Examination each candidate must (a) have satisfied the minimum University and Faculty entrance requirements ; (b) have been registered as an External Student, preparing for the Degree of B.Sc.(Econ.) ; (c) have been granted direct entry to the Final Examination, or have passed or been exempted from the Preliminary Examination in Economics, at least two academic years earlier, except that a student who, being entitled to partial exemption, has to pass in one subject of the Preliminary Examination in Economics to complete his qualification, must have completed his qualification at least one academic year earlier ; and (d) have obtained approval of candidature for Parts I and II of the Final Examination.

2. To be admitted to Part II of the B.Sc.(Econ.) Examination each candidate must have passed Part I, or have passed in all but one subject in which he has been referred, at least one academic year earlier. A candidate permitted in exceptional circumstances to take both Parts of the examination together, must have obtained approval of candidature. Permission to take both Parts of the examination together will not be granted to any candidate who has failed Part I of the examination.

3. Candidates who have obtained the B.A. Honours Degree in Sociology or the B.Sc. (Sociology) Degree are not permitted to offer Sociology or Social Anthropology as the Special Subject in Part II of the Final Examination.

[*Note.*—Special Regulations regarding Qualifications for Admission have been approved for full-time students at the University Colleges of Exeter, Hull and Leicester.]

DATE OF EXAMINATION

The Part I Examination shall take place once in each year and shall commence on the second Wednesday preceding the first Monday in June.

The Part II Examination shall take place once in each year and shall commence on the first Thursday after 3 June.

APPROVAL OF CANDIDATURE

Candidates should normally apply for approval of candidature during the period October-December of the session preceding that in which they propose to enter for Part I of the Examination. Applications for approval of candidature for Part I of the Examination to be held in 1954 and Part II in 1955 received after 1 December 1952, will be treated as late applications. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by the dates stated, application may be accepted after this on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 21 December. Entry forms will

not be despatched by post from the University after 25 January, and the candidate list will be closed on 1 February.

Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Part I	6	6
Part II	6	6
Referred subject (re-entry)	2	2

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Preliminary Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1956 ; but no such concession will be made to candidates who were partially exempt from the Preliminary Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations p. ix).

SCHEME OF EXAMINATION

1. The examination is divided into two Parts and normally a candidate must pass Part I before he enters for Part II. Nevertheless, in exceptional circumstances, a candidate may be permitted to take both Parts of the examination on the same occasion. Such permission will not be granted to candidates who have failed Part I of the examination.

2. The subjects of the examination are as follows :—

PART I

Part I of the Final Examination shall consist of eight papers, as follows :—

(i) All candidates, except those who propose to offer either of the following Special Subjects in Part II of the Final Examination :—

4. Industry and Trade

or 5. Accounting

are required to take the following *six* compulsory papers :—

Principles of Economics

Applied Economics

Political History

Economic History

Elements of Government

History of Political Ideas

and *two* alternative papers selected from the following list according to the options which are permitted for the Special Subject which the

candidate proposes to offer in Part II of the Final Examination :—

- (1) Elementary Statistical Method and Sources
- (2) Mathematics
- (3) Logic and Scientific Method
- (4) Accounting
- (5) Elements of English Law
- (6) Elements of Social Structure
- (7) The Structure of International Society
- (8) Psychology
- (9) Principles of Economic and Social Geography
- (10) International Law
- (11) An approved Modern Foreign Language. [An approved Modern Foreign Language is to be considered as “ One Paper ” for the purpose of this examination, but the examination will consist of two written papers and an oral test].
- (12) Economic History of England from the Norman Conquest to 1485.

Alternative papers must be selected according to the following scheme :—

Special Subject in Part II.

1. Economics, Analytical and Descriptive.

Alternative Papers in Part I.

- (1) Elementary Statistical Method and Sources.
- (2) Mathematics.
- (3) Logic and Scientific Method.
- (4) Accounting.
- (5) Elements of English Law.
- (6) Elements of Social Structure.
- (9) Principles of Economic and Social Geography.
- (11) An Approved Modern Foreign Language.
- (12) Economic History of England from the Norman Conquest to 1485.

2. Money and Banking.

Any two of the Alternative Subjects may be selected.

3. International Economics.

Any two of the Alternative Subjects may be selected.

6. Economic History (Modern).

- (1) Elementary Statistical Method and Sources.
- (3) Logic and Scientific Method.
- (5) Elements of English Law.
- (6) Elements of Social Structure.
- (7) The Structure of International Society.
- (9) Principles of Economic and Social Geography.
- (11) An approved Modern Foreign Language.
- (12) Economic History of England from the Norman Conquest to 1485.

7. Economic History (Mediaeval).

(Identical with Economic History (Modern).

8. Government. Any two of the Alternative Subjects may be selected.
9. Sociology. (6) Elements of Social Structure and a second subject which may be any of the other Alternative Subjects.
10. Geography. (9) Principles of Economic and Social Geography.
and a second subject selected from :—
(1) Elementary Statistical Method and Sources.
(2) Mathematics.
(6) Elements of Social Structure.
(7) The Structure of International Society.
(11) An Approved Modern Foreign Language.
(12) Economic History of England from the Norman Conquest to 1485.
11. Statistics. (2) Mathematics, and any one other of the remaining Alternative Subjects.
12. International Relations. (3) Logic and Scientific Method.
(6) Elements of Social Structure.
(7) The Structure of International Society.
(8) Psychology.
(9) The Principles of Economic and Social Geography.
(10) International Law.
(11) An Approved Modern Foreign Language.
(12) Economic History of England from the Norman Conquest to 1485.
13. Social Anthropology. (1) Elementary Statistical Method and Sources.
(3) Logic and Scientific Method.
(6) Elements of Social Structure.
(8) Psychology.
(9) Principles of Economic and Social Structure.
(11) An Approved Modern Foreign Language.
(12) Economic History of England from the Norman Conquest to 1485.

(ii) Candidates who propose to offer either of the following Special Subjects in Part II of the Final Examination :—

4. Industry and Trade.

or 5. Accounting.

are required to take the following *five* compulsory papers :—

Principles of Economics
Economic History
History of Political Ideas

Applied Economics
Elements of Government

and the following *three* alternative papers :—

- (1) Elementary Statistical Method and Sources
- (4) Accounting
- (5) Elements of English Law

In 1954 only candidates will be permitted to present themselves for examination in the seven compulsory papers and two alternative papers in accordance with the regulations published for 1952-53.

PART II

SPECIAL SUBJECTS

One of the following :—

I. ECONOMICS, ANALYTICAL AND DESCRIPTIVE

- (i) History of Economic Thought.
- (ii) Economic Theory.
- (iii) Applied Economics.
- (iv) *One of the following :—*
 - (a) Public Finance.
 - (b) Economic and Social Problems, treated statistically.
- (v) An Essay on the field covered by (i) to (iv) (a) above.

2. MONEY AND BANKING

- (i) Monetary Theory.
- (ii) English Monetary and Banking History.
- (iii) International Monetary Economics.
- (iv) Comparative Banking Institutions.
- (v) *One of the following :—*
 - (a) Public Finance.
 - (b) Business Finance.
 - (c) Law of Banking.

3. INTERNATIONAL ECONOMICS

- (i) International Trade, Migration and Capital Movements.
- (ii) International Monetary Economics.
- (iii) An Essay on the field covered by (i) and (ii).
- (iv) *One of the following :—*
 - (a) Monetary Theory.
 - (b) Business Administration.
 - (c) Principles of Economic and Social Geography.
 - (d) International Law (Parts A & C).
 - (e) Economic and Social Problems, treated statistically.
- (v) *One of the following :—*
 - (a) Public Finance.
 - (b) Commercial Law.
 - (c) The Economics and History of Transport.
 - (d) An Approved Modern Foreign Language.

4. INDUSTRY AND TRADE

- (i) Business Administration.
- (ii) Industry and Trade.
- (iii) Labour.
- (iv) *One of the following :—*
 - (a) Business Finance and Cost Control.
 - (b) Applied Statistics.
 - (c) Business Administration (Essay Paper).
- (v) Commercial Law.

5. ACCOUNTING

- (i) Accounting.
- (ii) Accounting.
- (iii) Business Administration.
- (iv) Commercial Law.
- (v) *One of the following :—*
 - (a) Business Finance.
 - (b) Industry and Trade.
 - (c) Applied Statistics.
 - (d) Public Finance.
 - (e) Law of Administration of Estates and Trusts.

6. ECONOMIC HISTORY (MODERN)

- (i) Economic History of England 1485–1760.
- (ii) Economic History of England 1760–1939.
- (iii) *Either* English Economic History, 1485–1603 *or* English Economic History, 1830–1876.
- (iv) Economic History of the United States of America from 1783.
- (v) *One of the following :—*
 - (a) Historical Geography.
 - (b) Constitutional History since 1660.
 - (c) International History.
 - (d) Social Philosophy.
 - (e) Economic and Social Problems, treated statistically.
 - (f) The Economics and History of Transport.
 - (g) Logic and Scientific Method.
 - (h) An Approved Modern Foreign Language.

7. ECONOMIC HISTORY (MEDIAEVAL)

- (i) and (ii) Economic History of England and Western Europe in the Middle Ages.
- (iii) English Economic History, 1377–1485.
- (iv) Mediaeval Political Ideas.
- (v) *One of the following :—*
 - (a) English Constitutional History to 1485.
 - (b) English Constitutional History since 1660.
 - (c) Economic History of England 1485–1760.
 - (d) Economic History of England 1760–1939.
 - (e) International History.
 - (f) Economic History of the United States of America from 1783.
 - (g) Social Philosophy.
 - (h) Economic and Social Problems, treated statistically.
 - (i) An Approved Modern Foreign Language.

8. GOVERNMENT

- (i) A Special Period in the History of Political Ideas studied in relation to set books for that period.
- (ii) The Government of Great Britain (advanced).
- (iii) Comparative Government.
- (iv) Political and Social Theory.
- (v) *One* of the following :—
 - (a) Constitutional History since 1660.
 - (b) Administrative Law.
 - (c) Public Finance.

9. SOCIOLOGY

- (i) General Sociology, i.e., Theories and Methods of Sociology.
- (ii) The Contemporary Social Structure of England and Wales.
[Note.—From time to time other areas may be prescribed as additional options.]
- (iii) Comparative Study of *one* of the following topics :—
 - (a) Morals and Religion.
 - (b) Marriage and the Family.
 - (c) Property and Social Class.
 - (d) Political Sociology.
 - (e) Urban Sociology.
- (iv) *One* of the following :—
 - (a) Demography.
 - (b) Social Psychology.
 - (c) Social Anthropology.
 - (d) Criminology.
- (v) Social Philosophy.

10. GEOGRAPHY

- (i) The Physical and Biological Background of Human Geography.
- (ii) Advanced Economic Geography, with special reference to Industry.
- (iii) Advanced Regional Geography.
- (iv) Advanced Regional Geography.
- (v) *One* of the following :—
 - (a) Historical Geography.
 - (b) Political Geography.
 - (c) The Geography of Agriculture.
 - (d) The Economics and History of Transport.
 - (e) Applied Geography.

11. STATISTICS

- (i) Theory of Statistics, including computational methods.
- (ii) Theory of Statistics, including computational methods.
- (iii) Economic and Social Problems, treated statistically.
- (iv) and (v) *Two* of the following :—
 - (a) Demography.
 - (b) Actuarial Statistics.
 - (c) Economic Statistics.
 - (d) Social Statistics.

12. INTERNATIONAL RELATIONS

- (i) International History.
- (ii) International Relations.
- (iii) International Institutions.

(iv) and (v) *Two* of the following :—

- (a) International Law.
- (b) International History (special subject).
- (c) The Problem of International Peace and Security.
- (d) The Philosophical and Psychological Aspects of International Relations.
- (e) The Geographical and Strategic Aspects.
- (f) The Interplay between Politics at the Domestic and International Levels.
- (g) Sociology of International Law.
- (h) *Either* Political and Social Theory *or* An Approved Modern Foreign Language.

13. SOCIAL ANTHROPOLOGY

- (i) General Principles of Social Anthropology.
- (ii) Economic and Political Systems of Simpler Societies.
- (iii) Moral and Ritual Systems of Simpler Societies.
- (iv) Ethnography of Special Areas.
- (v) *One* of the following :—
 - (a) General Sociology.
 - (b) Social Philosophy.
 - (c) Social Psychology.
 - (d) Principles of Economic and Social Geography.
 - (e) Logic and Scientific Method.
 - (f) Demography.
 - (g) Social Statistics.
 - (h) An Approved Modern Foreign Language.

3. Certain of the Alternative Subjects of Part I are included as optional subjects in Part II of the examination. A candidate may not include in Part II any Optional Subject which he has offered at Part I. In the case of an Approved Modern Foreign Language, a candidate may not offer in Part II the same language as he has taken in Part I, but he may offer a second language.

4. Students are required to state when applying for Approval of Candidature their Alternative Subjects in Part I, their Special Subject in Part II, and also which optional papers in Part II they desire to offer.

5. The standard of the examination for Part I is to be that which would normally be required of a whole-time student after a course extending over two years subsequent to completing the Preliminary Examination.

6. The examination shall be conducted in the main by means of printed papers, but the examiners shall be at liberty to test any candidate by means of oral questions.

7. All answers to examination questions shall be written in English unless instructions are given to the contrary.

8. A candidate at Part I of the examination who fails to reach the minimum standard in any one subject only may be referred, i.e., he may be permitted on the recommendation of the examiners to present himself on one occasion only in that subject, either before or on the same occasion as Part II.

9. The marks obtained in Part I of the examination will be combined with those obtained in Part II for the purpose of the classification for Honours.

10. There are no exemptions at this examination.

REFERENCE

1. A candidate at Part I of the examination who fails to reach the minimum standard in any one subject only may be referred, i.e., he may be permitted on the recommendation of the examiners to present himself on one occasion only in that subject either alone, or with Part II of the examination.

2. A candidate who fails in his referred subject will be required on re-entering to offer the whole of Part I of the examination again, and a candidate who takes his referred subject with Part II of the examination and fails in his referred subject, will have no report made on Part II of the examination.

3. The examiners will recommend that the candidate be referred only if his failure in the subject is not serious, and if his performance in the remaining subjects is reasonably good.

THE GERSTENBERG STUDENTSHIP IN ECONOMICS

The Gerstenberg Studentship and two other Studentships in Economics (£200) are awarded at the B.Sc. (Econ.) Examination. For detailed Regulations see the Scholarships Pamphlet.

THE STERN SCHOLARSHIP

Two Sir Edward Stern Scholarships each of the value of £40 and tenable for one year will be awarded on the results of Part I of the B.Sc.(Econ.) examination each year, to students taking subjects of commercial interest. For detailed regulations see the Scholarships Pamphlet.

TIME TABLE

The examination will be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 8 August the External Registrar shall publish a provisional list of candidates who shall have passed, arranged in alphabetical order in each of the five categories First Class Honours, Second Class Honours (Upper Division), Second Class Honours (Lower Division), Pass, and Part I. No other notification will be sent to candidates successful at Part I.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from Part of the Final B.Sc. (Economics) Examination (Part II) may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the B.Sc. (Econ.) Examination who have already passed Part I and who have completed more than half of the Part II Examination are eligible to apply for an Aegrotat Degree.

(2) Applications from, or on behalf of students must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the Examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.Sc. (Econ.) under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES

PART I

COMPULSORY SUBJECTS

Principles of Economics

The principles of economics, including theories of population, production, value, distribution, money and banking, and international trade.

Applied Economics

Applications of economic principles to the analysis of contemporary problems of production, trade, labour, money and public finance. A knowledge of the necessary background of economic geography is assumed (see below under *Principles of Social and Economic Geography*). Study for this subject should also be co-ordinated with the syllabus in *Elementary Statistical Method and Sources*.

Political History

Introductory Survey

The close of the Middle Ages. The significance of geographical and scientific discovery. The effect of the Renaissance and the Reformation on institutions and intellectual life. The Wars of Religion and their impact. The development of nationalism and absolutism in Europe in the seventeenth century. Political relationships between Europe and the rest of the world from the sixteenth century to the eighteenth century. The expansion of French civilization during the age of Louis XIV. French development in the eighteenth century ; institutions ; colonialism. The significance of enlightened despotism. The antecedents and causes of the French Revolution. The significance of an independent America. The effect of the French Revolution and the Napoleonic Wars on ideas and institutions. Importance of the Napoleonic Regime. The reconstruction of Europe 1813-15.

Political History of the Great Powers from 1815

The progress of the revolution :—(a) Political : Progress towards democracy in France, England, Germany and Russia. (b) Social and Economic : Movements against economic inequality in Austria-Hungary and Russia ; the rise of labour and socialist movements. (c) Nationalist movements in Italy, Germany, Austria-Hungary, and the Balkans.

International relations of the Great States of Europe. The attempt at government by Congress (1815-1825) and later action of the Concert of Europe. The reaction of the nationalist movements on international affairs. The evolution of the Eastern Question. The two camps (1870-1914). Epilogue : The Versailles Settlement.

The imperialism of the West and its reactions with the new nationalism of the East. The expansion of Russia in Asia. The relations of the Great Powers with China and Japan. The partition of Africa.

The United States of America : Internal political development and relations with Europe, Latin America and Eastern Asia.

Economic History

Economic Conditions and Development in England and Western Europe during the Fourteenth and Fifteenth Centuries

Agricultural organization ; changes in manorial structure and in the position of the peasantry ; the functions of the towns ; the development and organization of industries ; the pattern of international trade and finance ; economic and social doctrines.

Economic Developments in England and Western Europe during the Sixteenth and Seventeenth Centuries

The growth of the division of labour ; the factors that stimulated it and the major consequences ; the commercialization of agriculture ; the development and organization of industry ; the improvements in transport ; the organization of internal and international trade ; the mobilization of capital and the development of financial institutions ; the wage-earning classes and the problem of poverty ; economic relationships between Europe and the rest of the world ; economic thought and policy.

Economic change in Britain, Western Europe, and America, 1700-1850

The expansion of population ; its possible causes and effects ; increased occupational mobility ; internal migration and international movements of labour. The development of agriculture ; agrarian changes in Britain and Western Europe ; the extension of the frontier in America ; the Plantations and slave labour. The application of new techniques to manufacture, transport and trade ; the accumulation of capital and new forms of investment ; the concentration of industry ; the development of factory production ; the recruitment and training of labour ; the rise of trade unions ; industrial communities and the problems of early urbanization. The expansion of domestic and international trade ; the economic relations of mother countries and colonies. The growth and specialization of financial institutions ; the migration of capital. The coming of the railway and the effects of this on economic and social life in Britain, Europe and America. The movement of prices, rents, rates of interest, and wages ; industrial fluctuations ; the economic causes and effects of the wars and revolutions. The tendencies in economic thought and in national economic policies in a period of rapid expansion.

Industrialization and the international economy, 1850-1939

Industrialization in the United States, Germany, Western Europe, Japan and Russia, and its effects on relatively backward areas. The development of new industries, world communications, and new economic areas. The reconstruction of agriculture, the development of new agricultural resources, and the survival of peasant agricultures. The development of the main staples of international trade. The gold discoveries. The rhythm of economic development before and after

the revival of tariffs. The economic consequences of the first World War. The post-war reconstruction of Europe. The American boom and collapse of 1929. The New Deal policies of the United States. The rise of National Socialism in Germany. The development of planning in U.S.S.R. The economic policy of Great Britain. The organization and main pattern of international trade in the inter-war period.

The historical analysis of industrial development since 1850. Industrial concentration. The growth of combination, national and international. The new industries and sources of power. Mass production and growing specialization, technical and managerial. The problems of high productivities and high capitalization.

The corporate organization of business. The growth of specialized financial institutions. The sources of capital expansion and the relations of business to the State.

The evolution of labour and labour systems. The changing occupational structure of industrialized communities. The problems of labour mobility, national and international. Standards of living and State industrial policies. Trade unions and the growth of collective bargaining. The International Labour Organization and international trade union organization. Co-operative movements.

The Social policies of industrial States. The character of fiscal, insurance and welfare legislation. The growth of public utilities and public enterprise.

A knowledge of the necessary background of economic geography is assumed (see below under *Principles of Social and Economic Geography*).

The Elements of Government

(a) The necessity of rules in a modern community. The functions of government. Conceptions of law, the state, sovereignty. Centralization and Decentralization. The Problem of federalism. The separation of powers. Democracy, oligarchy, dictatorships. The meaning of freedom, individual and social. Constitutionalism and the rule of law. Relation between politics and ethics, and politics and economics. Relation of psychology to politics. Methods of political study.

(b) The Government of Great Britain. The study of the principal institutions in Great Britain, central and local, and the relations of Great Britain to the United Nations and the Commonwealth. Comparison, in general terms, of the working of the British Government with those of France and the United States.

The History of Political Ideas

The subject will involve a general knowledge of the history of political philosophy from Plato and Aristotle to the present time with some attention to the general history which gives its perspective to the major classics in the subject. Students will be expected to show acquaintance with Plato's *Republic*, Aristotle's *Politics*, Augustine's *City of God*, Machiavelli's *Prince*, Hobbes' *Leviathan*, Locke's *Second Treatise Concerning Government*, and his *Letter concerning Toleration*, Rousseau's *Discourse on the Origins of Inequality* and his *Social Contract*, Burke's *Conciliation with America*, *Reflections on the French Revolution*, and *Thoughts upon Scarcity*, Hamilton and others, *The Federalist*, Bentham's *Fragment on Government*, J. S. Mill's *Liberty and Representative Government*, Karl Marx and F. Engels, *The Communist Manifesto*, T. H. Green's *Principles of Political Obligation*, Bosanquet's *Philosophical Theory of the State*, and N. Lenin's *State and Revolution*.

ALTERNATIVE SUBJECTS

1. *Elementary Statistical Method and Sources*

(All candidates will be expected to answer questions on the subjects of paragraph 1, but a certain choice of questions will be given on the subjects of paragraphs 2 and 3.)

1. Collection, definition and tabulation of data ; approximations and error ; graphical representation. Frequency distributions ; measures of location and dispersion. Index numbers in theory and practice. Time series and elementary analysis of them. The application of statistical methods to economic and social data.

2. The main sources of statistics of population, manpower, production, consumption, prices, trade, national income and balance of payments. The use of statistics in the treatment of social problems ; the technique of social surveys.

3. Moments of frequency distributions. The elements of probability ; the Binomial, Poisson and Normal distributions. Elementary treatment of correlation and regression. Introduction to the theory of sampling and significance.

[Note :—Logarithm tables will be provided by the University and slide rules may be brought to the examination in this subject.]

2.—*Mathematics*

Limits and the elementary theory of convergence of series.

Differentiation and integration of functions of one variable. Expansions of functions ; Taylor's and Maclaurin's theorems. Maxima and minima of functions of one variable. Tangents to curves ; areas and length of curves. Differentiation and integration of functions of two or more variables and elementary applications. Areas and volumes of solids. Numerical methods of integration. The simplest differential and difference equations.

Finite differences and applications to interpolation, summation and integration. Compound interest and annuities. The basic principles and the elementary theory of probability. The elements of the theory of determinants and matrices. The simplest properties of complex numbers, the Argand diagram and de Moivre's theorem. Gamma and Beta functions.

[Note.—Knowledge of algebra up to and including the Binomial Theorem and of the elements of trigonometry and co-ordinate geometry, is assumed. Logarithm tables will be provided by the University, and slide rules may be brought to the examination in this subject.]

3.—*Logic and Scientific Method*

Origin and problems of modern logic. The Paradoxes. Languages under Discussion (object language) and the language in use (metalanguage). Truth of statements vs. validity of arguments. Validity as the fundamental problem of elementary logic. Formative and descriptive signs of a language. Definition of "valid inference". Outlines of the logic of statement composition. Derivation vs. Demonstration. Detailed comparison of the traditional logic of categorical propositions with Boolean methods. Role of definitions. Scientific Method and its limitations. The aims of science. Logical analysis of explanation. Strictly universal statements and their negation. Theories and observational tests. Hypothetical deductive systems. Hypotheses about single cases and frequency hypotheses. Probability. The problem of induction and

its historical background. Inductive probability vs. degrees of confirmation. The aims and the status of the theoretical social sciences. Causation, determinism, historicism. Methodological collectivism, individualism, psychologism, scientism. Social science and ethics. Social theory and social history. Applications to economics.

4.—*Accounting*

The balance-sheet, and profit and loss account.

The ledger and the double-entry system : the recording of ordinary trade transactions, and adjustments ; the books of original entry.

Accounts as instruments of management and control. Internal check. Interpretation of accounts, and their uses and limitations for control.

Partnership and company accounts, and more especially the annual reports to shareholders. Company finance ; simple annuity calculations.

Accounts of public bodies.

Capital and revenue ; “ goodwill ” ; depreciation ; company dividends and reserves.

Elements of British income tax, and its treatment in accounts.

5.—*Elements of English Law*

Candidates must take Part A and *either* Part B *or* Part C. Those choosing this alternative subject and intending to select Government as their special subject in Part II of the degree must take Part B, and those intending to take Commercial Law, the Law of Banking, or the Law of Administration of Estates and Trusts as part of their special subject in Part II must take Part C.

Part A. English Legal Institutions

The nature and origins of law. Historical outline of English law and the development of Common Law and equity. Main characteristics of modern English law. Sources ; legislation and statutory interpretation, case law, and custom. Organization of the courts and their jurisdiction. Arbitration. Codification. The theory of binding precedent. The personnel of the law and the legal profession ; judges, Justices of the Peace, juries, barristers and solicitors. Legal Aid and Advice. An outline of procedure and evidence. Legal persons, natural and artificial. The subject and his rights and duties in the State. The branches of the Law and their principal characteristic ; Constitutional Law, Administrative Law, Criminal Law, Contract, Tort, Family Law, Property and Mercantile Law.

Part B. Elements of British Constitutional Law

The nature and sources of British Constitutional Law ; separation of powers ; the supremacy of Parliament ; constitutional conventions.

Parliament : its meeting and procedure. The House of Commons ; qualifications for membership, officers of the House, elections, process of legislation, opportunities for control of Government policy, financial control, parliamentary privilege. The House of Lords ; its composition and functions. Conflicts between the two Houses.

The Executive.—The Monarchy. Royal prerogative. The Crown and foreign relations ; the treaty-making power and Acts of State. The Privy Council. The Cabinet. Ministerial responsibility. The Prime Minister. Type of governmental powers, delegated legislation, the *ultra vires* doctrine. The rule of law.

The Judiciary.

The Citizen and the State.—Freedom of the person ; arrest and search ; freedom of discussion ; the Press ; public meetings ; military and martial law.

The British Commonwealth.—Distinction between dominions, colonies, protectorates and trust territories. Dominion status. The Judicial Committee of the Privy Council.

or

Part C. Common Law Foundations of Commercial and Industrial Law

Law of Contract.—Formation ; offer, acceptance, consideration and capacity. Defective contracts ; Statute of Frauds and Sale of Goods Act, Section 4, misrepresentation, mistake, undue influence, and illegality. Discharge ; agreement, frustration, performance and breach. Remedies ; damages, specific performance and injunction. Limitation. Assignment of contractual rights. Distinction between assignability and negotiability.

Law of Tort.—General principles. Negligence, contributory negligence, dangerous things. Conversion. Business competition, including restraint of trade, conspiracy, interference with contractual and proprietary rights (including patents, trade marks and copyrights), passing-off and slander of title. Master and Servant.

6.—Elements of Social Structure

The possible meanings of the term “social structure”. Social institutions and non-institutional elements in society. Social order and social change. The main concepts used in the analysis and classification of social groups, relationships and forces. The application of these concepts to the study of the main forms of (a) *Social Groups*, i.e., the family and other primary groups, national and local communities, associations, social classes ; (b) *Social Relations*, i.e., co-operation, competition, bargaining, conflict, leadership ; (c) *Social Controls*, i.e., law, custom, convention, morals and religion ; (d) *Authority and Power*, i.e., familial, political and economic power, their sanctions and methods of enforcement. A general comparison of the above elements as combined in the social structure of feudal, early capitalist and contemporary British Society.

*7.—The Structure of International Society**I.—Context of the Study :—*

The relevance and necessity, in the study of international relations, of the companion disciplines of history, economic geography, political theory and international law.

II.—Basic Ideas :—

The Notion of the State as “Person”—its perils, uses and implications.

The Notion of an “International Society”—forms and bases of social solidarity on an international scale.

The Notions of International Right and Wrong—standards of propriety—legal, moral, ethical—in relations between States : the role of jurisprudence and of moral philosophy in the appreciation of international affairs.

The Notion of a Single World Order—the relations between sovereignty, order and international law ; theories of world-wide constitutional integration.

III.—International Politics :—

The Behaviour of States—the needs, interests, aspirations and anxieties of States ; and the responsibilities of statesmen : motivations of State behaviour : traditional and environmental factors conditioning the outlook of States.

Internal Elements—the interplay and interdependence of politics at the domestic and international levels.

The Mutual Impact of States—means and methods of pressure in the relations between States.

The Grading of the Powers—the ever-shifting balance of influence and authority in diplomatic exchanges, and the factors on which it depends.

The States of Relationships between States—points of contact, and of friction, between peoples : the conditions of misunderstanding : the basic beliefs and the ruling enthusiasms of mankind and their influence upon the attitudes of States : man's urge to make a better world and the conflicting modes of its expression.

IV.—Institutional Elements :—

The nature of international institutions : the architecture of institutionalized international co-operation, including devices for the attempted consolidating of peace.

8.—*Psychology*

Scope and Methods of Psychology. Introspection, Observation of Behaviour and experiment.

Types of response : reflex actions, instinctive and acquired reactions, learning. Emotion and Sentiment. Temperament and Character. Volition. Role of Unconscious Factors.

Cognitive Processes : perception, judgment and reasoning. Memory. Language and conception. Subjective and objective factors of belief. Prejudice.

Phases in the growth of personality. Individual differences in intelligence, temperament and character, and the methods of assessing them.

9.—*Principles of Economic and Social Geography*

(i) A review of the main types of terrestrial environment and the influence of physical and climatic conditions on human society and economy. This part to be taken as a background course (non-examined) by all students in relation to the courses in *Applied Economics* and *Economic History*.

(ii) A further development of the foregoing principles with special reference to production in the modern world, and illustrated by specific regional instances.

10.—*International Law*

(An adequate knowledge of which will also be presupposed in papers (i), (ii), and (iii) of Special Subject 12 International Relations.)

A. *General Principles.*

1. The Foundation of International Law. International Law and Society. The Sources of International Law. International and Municipal Law. The Domain of International Law. Development and Science of International Law.

2. International Personality : The Subjects of International Law. The Principles of Sovereignty and State Equality. Recognition. Representation of States. International Persons other than States. Continuity of States and State Succession.

3. State Jurisdiction : General principles. Territorial Jurisdiction. Limitation of Territorial Jurisdiction under International Customary and Conventional Law. Personal Jurisdiction.

4. Objects of International Law : Territory. Land Frontiers. Maritime Frontiers and claims to the Continental Shelf. The High Sea. Individuals. Business Enterprises and Ships.

5. International Transactions : International Treaties. Unilateral Acts and Quasi-Contractual Obligations. International Torts.

6. War and Neutrality : Measures Short of War. State and Effects of War. Warfare on Land. Military Occupation of Enemy Territory. Maritime Warfare. Warfare in the Air. Penalties for the Violation of Rules of Warfare. Neutrality. Civil War and Belligerency. Termination of War.

And either

B. *The Law of International Institutions.*

Judicial International Institutions with special reference to the History of International Arbitration, to the Permanent Court of International Justice, and to the International Court of Justice. Administrative International Institutions (e.g., the Universal Postal Union, Unesco or the International Bank for Reconstruction and Development). Quasi-Legislative Institutions, with special reference to the International Labour Organization, General Purposes Institutions (with special reference to the United Nations and Institutions within the framework of the United Nations).

or

C. *International Economic Law.*

Basic Standards, with special reference to the Standards of National and Most-Favoured-Nation Treatment. Protection of Property Abroad. Commercial Treaties, Monetary Agreements, State Loans and other State Contracts. The Calvo Clause, Methods of International Financial Control, and the Porter Convention. The Law relating to Trading with the Enemy, the International Economic and Financial Law of Military Occupation, the Protection of Neutral Property, and the Law of Reparations. The Law of International Economic and Financial Institutions (e.g., The International Bank for Reconstruction and Development and the International Monetary Fund).

Books Recommended.

A. *General Principles.*—Students are advised to begin their studies by reading either Brierly's *Law of Nations* (4th ed.) or Part One of Schwarzenberger's *Manual of International Law* (3rd ed.).

Text-books :—

Oppenheim : *International Law* (7th ed., ed. by Lauterpacht—two vols.).

Schwarzenberger : *International Law as Applied by International Courts and Tribunals* (2nd ed.).

Case-books :—

Briggs : *The Law of Nations*. (2nd ed.)

Hudson : *Cases and other Materials on International Law* (3rd ed.)

Green : *International Law through the Cases*.

Periodicals :—

American Journal of International Law.
British Year Book of International Law.
International Organization.
Year Book of World Affairs.

*Further Reading (Special Subjects).**B. The Law of International Institutions :—*

Eagleton : *International Government* (2nd ed.).
 Goodrich-Hambro : *The Charter of the United Nations.*
 Hudson : *International Tribunals.*
 Schwarzenberger : *The League of Nations and World Order.*

C. International Economic Law :—

Foreign Office : *Handbook of Commercial Treaties.*
 McNair : *Legal Effects of War* (3rd ed.).
 Schwarzenberger : *The Province and Standards of International Economic Law* (2 *International Law Quarterly*, 1948).
 Smith : *The Economic Use of International Rivers.*

[*Note.*—If International Law has been taken as an alternative subject in Part I it cannot be taken as an option in Special Subject 3 (International Economics) or 12 (International Relations).]

*11.—An Approved Modern Foreign Language**1. The following languages have been approved :—*

French, German, Italian, Russian, Spanish.

2. In all languages, in addition to a knowledge of the normal vocabulary, familiarity with terms used in at least one of the social sciences will be required, and in the paper containing translation from the foreign language alternative passages will be included.

3. The standard, whether the language be taken with Part I or with Part II, will be equivalent to two year's work after the Preliminary Examination or the Advanced Level of the General Certificate of Education (Higher School Certificate).

4. The syllabus will be as follows :—

- I. Grammar. (Direct grammar questions will not be set.)
- II. Translation into English.
- III. Translation from English into the foreign language.
- IV. Essay in the foreign language.
- V. Oral.

5. The required length of the essay will be between 300 and 400 words. A choice of essay subjects will be given, to include both themes connected with the civilization and culture of the foreign country and themes taken from the specialized fields with which the degree is concerned.

6. The oral test will consist of conversation on general themes, on the civilization and culture of the foreign country, and on matters connected with the social sciences. There will be no test in extempore translation.

7. Set Books will not be prescribed, but candidates will be expected to have read texts in the foreign language in one or more of the social sciences.

[*Note.*—The same language cannot be taken in both Part I and Part II.]

12.—*Economic History of England from the Norman Conquest to 1485.*

Agriculture : the pattern of settlement ; agricultural methods and techniques, with special reference to arable and sheep farming ; the economic evolution of the manor and the great estate ; the expansion of the twelfth and thirteenth centuries ; agrarian problems of the fourteenth century ; the Peasant's Revolt ; the transformation of the manorial economy.

Economic aspects of the development of towns ; control of the urban economy ; merchant and craft guilds ; price policy and food supplies. The development of industry, especially of the textile, mining and building industries ; changes in industrial organization and techniques. Movements of wages and prices, industrial and agricultural.

Commerce : the commodities of trade, with special reference to wool, cloth and wine ; the development of trade with Scandinavia and the Baltic, Germany and the Low Countries, France, the Iberian Peninsula and Italy ; general trends of trade ; the activities of foreign merchants in England ; the evolution of the Staplers and the Merchant Adventurers ; the finance of trade ; fairs and markets ; commercial policy, urban and national.

PART II

SPECIAL SUBJECTS

1.—*Economics, Analytical and Descriptive*(i) *History of Economic Thought.*

The history of economic thought from Aristotle to the present day. Special attention should be paid to the period since 1776. A part of the paper will consist of questions on Adam Smith, *Wealth of Nations* ; Ricardo, *Principles of Economics* ; Marshall, *Principles of Economics* ; Wicksell, *Interest and Prices*.

(ii) *Economic Theory.*

The principles of economic analysis treated at a more advanced level than in Part I.

(iii) *Applied Economics.*

Applications of economic principle to contemporary problems at a more advanced level than in Part I. Agricultural economics. Economics of modern industry, business finance and the money market. International economic problems.

(iv) *One of the following :—*

(a) *Public Finance.*—The main problems of public finance, national and local, and social accounting treated both analytically and descriptively with appropriate reference to budgetary policy and the size and content of the principal economic aggregates. A knowledge of the constitutional and administrative background is required.

(b) *Economic and Social Problems, treated statistically* (syllabus as for paper (iii) Statistics).

(v) *Essay.*

Candidates will be given an opportunity of writing either one long essay or two shorter essays on any of the subjects dealt with under (i) to (iv) (a) above.

2.—*Money and Banking*(i) *Monetary Theory.*

The nature and definition of money. The theory of price changes. The rate of interest. The trade cycle. The principles of banking,

and the main theoretical problems arising out of the organization of banking systems. The theoretical aspects of central banking. The whole to be illustrated by reference to significant monetary experiences of any country.

(ii) *English Monetary and Banking History.*

The history of English money and banking, with special reference to the period since 1797 ; to include also the main controversies, the behaviour of prices, and the foreign exchange aspects. (Half the paper to be devoted to the period since 1890.)

(iii) *International Monetary Economics.*

The theory and practice of the foreign exchanges. Items in and factors affecting the balance of payments. Foreign exchange control and other government intervention in the foreign exchange markets. The Sterling Area. International payments agreements. International monetary institutions ; their aims, their experience, and the fundamental problems in their work. Candidates will be expected to show a knowledge of the main relevant economic and financial developments in recent years.

(iv) *Comparative Banking Institutions.*

Contemporary banking and other money market institutions, both official and private, in Britain, the United States, the Dominions, and other principal countries, to be treated comparatively.

(v) *One of the following :—*

(a) *Public Finance* (syllabus as for paper (iv) (a) Economics, Analytical and Descriptive).

(b) *Business Finance.* Business risks and their distribution among suppliers of capital ; problems of internal finance ; the capital market ; amalgamations ; capital re-organizations ; financial institutions.

(c) *Law of Banking.* Law of Negotiable Instruments. Banking Law :—The legal relationship between banker and customer. Current accounts, deposit accounts, trust accounts, overdrafts. The pass book. The Banker's Books Evidence Act, 1879. Cheques and documents analogous to cheques. The payment and collection of cheques. The payment of cheques by mistake. Forged cheques. Securities for advances in general, pledges and mortgages of negotiable instruments, stocks and shares, life policies, interests in land and documents of title to goods. Banker's commercial credits. The realization of securities, bankers' guarantees. The legal position in the event of the insolvency of the customer. An outline of Stock Exchange Law.

[Note.—An elementary knowledge of the English Legal System and of the Law of Contract will be presumed and candidates are advised not to select this option unless they have taken Elements of English Law (Parts A and C) in Part I.]

3.—*International Economics*

(i) *International Trade, Migration and Capital Movements.*

Causes and consequences of international trade in goods and services and of the international movements of labour and capital. Factors affecting the localization of industries. Methods of state regulation of international trade, migration and capital movements. Candidates will be expected to show a knowledge of the theoretical issues involved ; of the historical development of ideas ; of the main relevant economic and financial developments in recent years : and of the relevant international institutions.

(ii) *International Monetary Economics* (syllabus as for paper (iii) Money and Banking).

(iii) An Essay on the field covered by (i) and (ii).

(iv) One of the following :—

(a) *Monetary Theory* (syllabus as for paper (i) Money and Banking).

(b) *Business Administration* (syllabus as for paper (i) Industry and Trade).

(c) *Principles of Economic and Social Geography* (syllabus as for alternative subject 9 in Part I).

(d) *International Law* (Parts A and C) (syllabus as for alternative subject 10 in Part I).

(e) *Economic and Social Problems, treated statistically* (syllabus as for paper (iii) Statistics).

(v) One of the following :—

(a) *Public Finance* (syllabus as for paper (iv) (a) Economics, Analytical and Descriptive).

(b) *Commercial Law* (to be treated from a commercial standpoint) :—

Introduction.—History of the Law Merchant.

The Law of Agency.—The creation of the principal and agency relationship and the scope of the Agent's authority. The position of the Principal and the Agent vis-à-vis third parties in connection with Contracts and Torts. Passing of property by Agents and The Factors Act, 1889. Rights and duties of the Principal and Agent *inter se*. Agent's commission. Termination of Agency. The Agency of Married Women.

Partnership and Company Law.—The nature and advantages of corporate personality and the distinction between companies incorporated under the Companies Act, and other commercial associations, incorporated and unincorporated. The nature of Partnership. The formation of partnership and the rights and duties of partners towards third parties and *inter se*. The firm name and property. Termination and dissolution and rights to property especially goodwill. Limited Partnerships. Formation of Companies under the Companies Act, 1948. Types of Companies. The nature and contents of the Memorandum and Articles of Association. Flotation of Companies, promoters and prospectuses. Capital. Shares and dividends. Meetings and Resolutions. Directors and other officers. Annual Return, Accounts and Audit. Debentures ; and (in outline only) Reconstruction and amalgamation, Inspection, and winding up.

Sale of Goods.—The special rules relating to Sale of Goods under the Sale of Goods Act, 1893. C.i.f., f.o.b., and other special forms of international sales and provision of finance by Banker's Commercial Credits. Hire Purchase Agreements.

Cheques and Bills of Exchange, Carriage by Sea and Land and General Principles of Insurance Law with particular reference to Marine Insurance. The objects of the Law of Bankruptcy and the Effect of Bankruptcy on Proprietary and Contractual Rights. Candidates will only be expected to display an elementary knowledge of this paragraph to the extent necessary for a proper understanding of the main subjects previously mentioned (especially Sale of Goods).

[Note :—An elementary knowledge of the English Legal System and of the Law of Contract and Tort will be presumed and candidates are advised not to select this subject unless they have taken Elements of English Law (Parts A and C) in Part I.]

[*Note.*—Candidates will be supplied in the Examination Room with Queen's Printer copies of the Partnership Act, 1890, the Companies Act, 1948, the Sale of Goods Act, 1893, and the Bills of Exchange Act, 1882.]

(c) *The Economics and History of Transport.*—The terms of investment in transport under competition and monopoly, and under State (including municipal) and private enterprise. The general character of transport costs and the influence of geographical factors upon them. The theory and practice of transport charges, passenger and freight. The economic consequences of technical progress. Factors affecting the size and organization of transport undertakings. International transport arrangements, agreements and institutions. The role of the State in relation to the development of transport generally. The problems of transport under State enterprise. Transport costs as an element in the price of goods and the cost of living. The influence both of the distribution of industry and population upon the development of transport, and of transport upon the growth and distribution of industry and population. All forms of transport to be studied, including shipping and air transport. The period covered historically to be from 1800 onwards.

(d) *An approved Modern Foreign Language* (syllabus as for alternative subject II in Part I).

4.—*Industry and Trade*

(i) *Business Administration.*

The purpose and structure of business organization, both inside and outside the business unit ; a comparison of practice as regards organization in the principal branches of business enterprise.

The special features of the organization and of the administrative and economic problems of large-scale business :—the delegation of functions, the allocation of responsibility, and the machinery of control. The specialized forms of organization within the business unit for (a) management and the determination of business policy, (b) purchasing, (c) manufacturing, (d) finance, (e) selling, (f) recruitment, promotion and retirement of staff.

Buying, financing and selling policy in various conditions of the market, with special reference to the price problems of industrialists and wholesale and retail traders.

The effects of predictable and non-predictable variations in demand and supply on the operation of a business.

Trade associations and their influence on market conditions.

(ii) *Industry and Trade.*

Industrial and commercial structure. The financing of business enterprise. The depreciation of assets. The location of the business firm and of the producing unit. Marketing, including specialized markets, wholesale and retail distribution and import and export business. The provision of transport services. Works management : production planning, progressing of work, and stock control. The pricing of products. Business fluctuations. The relations between business and the State. Technical invention and the working of the patent system. Government control of monopoly and restrictive practices. The constitution and special problems of Government-owned and Government-controlled enterprises : including compensation for compulsory purchase, methods of organization, control of competition and the determination of prices.

(iii) *Labour*. (a) Organization and relations. (b) Law. Candidates are required to show a knowledge of both parts.

(a) Working population and total population. Distribution of working population between occupations and industries. Sources of current statistics.

Trade Union organization. Outline of development in Great Britain. International comparisons. Types of Union. Functions of the Union.

Voluntary wage negotiation : structure and working. Arbitration. Forms of wage regulation. Industrial disputes. Public policy towards wage movements.

Measurement of changes in the cost of living.

Methods of wage payment. Incentive systems.

Human nature in the working life : motivation and morale. Relations between management and labour at the place of work. Joint consultation.

Measurements of productivity.

Unemployment : types and causes.

(b) The legal relations between employers and employed. The contract of employment at common law and statutory modifications. The liability of the employer for industrial accidents. Legislation affecting wages, holidays, hours of work, safety, health, welfare, and other working conditions of employed persons. Wages Councils and other wage regulating authorities. The Truck Acts. Legislation affecting factories and workers in particular industries, e.g., mining, transport, agriculture, shipping, retail distribution. The law of Trade Unions. Collective Agreements. Civil Conspiracy. Strikes and Lockouts. Industrial Arbitration and Conciliation. Main principles of National Insurance Law, including Insurance against Industrial Injuries and Diseases.

(iv) One of the following :—

(a) *Business Finance and Cost Control*.—Business risks and their distribution among suppliers of capital ; problems of internal finance ; the capital market ; amalgamations ; capital re-organization ; financial institutions. The use and limitations of accounting and statistical records for the ascertainment and control of costs. Accounting for labour, material and equipment. The treatment of overheads. Budgetary control. Standard costs.

(b) *Applied Statistics*.—Sources of statistics ; actual construction of tables, diagrams, etc., based on the original data (official or private) of statistics of trade, production, costs, sales, prices, wages ; index-numbers ; the writing of reports and précis ; use of mechanical aids to calculation.

[Note.—Candidates are required to submit their note-books for inspection by the examiners. Candidates will be instructed on the examination programme sent with the entry form as to the time and place for submission of their note-books. Logarithm tables will be provided by the University, and slide rules may be brought to the examination in this subject.]

(c) *Business Administration* (Essay Paper).—A choice of subjects will be offered from the range of topics covered by the syllabuses for the papers in (i) Business Administration, (ii) Industry and Trade, and (iii) Labour.

(v) *Commercial Law* (syllabus as for paper (v) (b) International Economics).

5.—Accounting

(i) and (ii) Advanced company accounts : formation, reconstruction, and audit ; holding companies.

Valuation of a business, shares, partnership rights, etc. ; measurement of income ; depreciation ; case law of dividends.

Introduction to trustees' and executors' accounts.

The principles of the law of income taxation.

Business administration and the measurement of costs ; information for controlling efficiency and for price and output decisions. The meaning of "cost" : historical and opportunity cost, marginal cost and average cost ; job, process, and operating costs. Accounting for material, labour, and equipment ; description and criticism of on-cost allocation. Budgetary control and standard costs.

(iii) *Business Administration* (syllabus as for paper (i) Industry and Trade).

(iv) *Commercial Law* (syllabus as for paper (v) (b) International Economics).

(v) One of the following :—

(a) *Business Finance* (syllabus as for paper (v) (b) Money and Banking).

(b) *Industry and Trade* (syllabus as for paper (ii) Industry and Trade).

(c) *Applied Statistics* (syllabus as for paper (iv) (b) Industry and Trade).

(d) *Public Finance* (syllabus as for paper (iv) (a) Economics, Analytical and Descriptive).

(e) *Law of Administration of Estates and Trusts*.—Devolution of Property on Personal Representatives. Appointment of Executors. Grants of Probate and Letters of Administration. Property devolving on Personal Representatives. Administration of Assets of Solvent and Insolvent Estates. Rules of Succession in Intestacy. Assents. The nature and classification of Trusts. Settlements upon Trust for Sale. Powers, Duties and Liabilities of Personal Representatives and Trustees. Apportionments between Capital and Income. Remedies of Beneficiaries and Creditors. "Following" Trust Property. Release and Discharge of Personal Representatives and Trustees.

6.—Economic History (Modern)

(i) *Economic History of England from 1485 to 1760*.

(ii) *Economic History of England from 1760 to 1939*.

(iii) Either *English Economic History 1485-1603* or *English Economic History 1830-1876*.

(iv) *Economic History of the United States of America from 1783*.

(v) One of the following :—

(a) *Historical Geography* (syllabus as for paper (v) (a) Geography).

(b) *Constitutional History since 1660* :—

The Restoration, the Revolution, Act of Settlement, Act of Union.

The crown, the prerogative, the dispensing, suspending and pardoning powers. Armed forces, police. Treason and riot. The civil list.

The prime minister, secretaries of state, and principal departments.

Parliament. Duration and intermission. Composition of both houses. The unreformed electorate. Qualifications of members. Impeachment and attainder. Privileges of parliament. Its control of finance. The position of the Speaker. Dissolution.

The Judiciary and its independence.

Liberty of the subject. Habeas Corpus. Right of petition. Freedom of the Press. General warrants. Fox's Libel Act.

Political parties, their influence on the formation and fall of ministries. Patronage and influence. Relations of the sovereign, ministers, and parliament in the system of parliamentary monarchy.

The old colonial system. Unreformed local government. The reform of the franchise 1832, 1867, and 1884. The development of party organization. The conventions of the constitution and the growth of cabinet government. The civil service. The re-organization of the administrative and judicial systems after 1832. The procedure of the Commons and the problem of the House of Lords. The growth of local government and the changes in its relations with central government. The reform of the judicial system. The development of Dominion status.

- (c) *International History* (syllabus as for paper (i) International Relations).
- (d) *Social Philosophy* (syllabus as for paper (v) Sociology).
- (e) *Economic and Social Problems, treated statistically* (syllabus as for paper (iii) Statistics).
- (f) *The Economics and History of Transport* (syllabus as for paper (v) (c) International Economics).
- (g) *Logic and Scientific Method* (syllabus as for alternative subject 3 in Part I).
- (h) *An Approved Modern Foreign Language* (syllabus as for alternative subject 11 in Part I).

7.—*Economic History (Mediaeval)*

- (i) and (ii) *Economic History of England and Western Europe in the Middle Ages*.
- (iii) *English Economic History 1377-1485*.
- (iv) *Mediaeval Political Ideas* (syllabus as for paper (i) (b) Government).
- (v) One of the following :—
 - (a) *English Constitutional History to 1485*.
 - (b) *Constitutional History since 1600* (syllabus as for paper (v) (b) Economic History (Modern)).
 - (c) *Economic History of England 1485-1760*.
 - (d) *Economic History of England 1760-1939*.
 - (e) *International History* (syllabus as for paper (i) International Relations).
 - (f) *Economic History of the United States of America from 1783*.
 - (g) *Social Philosophy* (syllabus as for paper (v) Sociology).
 - (h) *Economic and Social Problems, treated statistically* (syllabus as for paper (iii) Statistics).
 - (i) *An Approved Modern Foreign Language* (syllabus as for alternative subject 11 in Part I).

8.—Government

- (i) *A Special Period in the History of Political Ideas studied in relation to set books for that Period.* One of the following special periods must be chosen :—

(Candidates must state, when applying for approval of candidature, which special period they select.)

- (a) *The Ancient World* (History of Political Ideas from Plato and Aristotle to the fall of the Roman Empire).

Plato : *The Republic, The Statesman, and the Laws* (Jowett's Translation).

Aristotle : *Politics* (Jowett's Translation).

Cicero's *Republic and Laws* (Loeb's classics edition).

Augustine : *City of God* (Everyman's Library edition).

- (b) *The Mediaeval World* A.D. 476 to 1500.

John of Salisbury : *Policraticus* (translated Dickinson).

Marsiglio of Padua : *Defensor Pacis* (ed. Prévité-Orton).

Aquinas : *Selected Political Writings* (ed. A. P. D'Entreves).

Dante : *De Monarchia* (trans. Wicksteed).

Fortescue : *Governance of England* (ed. Plummer).

- (c) *Political Ideas, 1500–1640.*

Machiavelli : *The Prince* (Everyman's Library).

Luther : *To the Nobility of the German Nation* (trans. Wage and Cucheim) ; *On Good Works* (trans. W. A. Lambert).

Calvin : *Institutes*, Bk. IV.

Anon : *Defence of Liberty against Tyrants* (ed. Laski).

Hooker : *Ecclesiastical Polity* (Everyman's Library).

James I : *The True Law of Free Monarchies* (in C. H. McIlwain, *Political Works of James I*).

- (d) *Political Ideas 1640–1715.*

Thomas Hobbes : *Leviathan*.

Benedict Spinoza : *Tractatus—Theologico-Politicus* (trans. Elwes).

John Lilburne : *England's Birthright Justified*.

Gerard Winstanley : *The True Law of Freedom in a Platform* (in G. Winstanley, *Works* ed. G. H. Sabine).

George Savile, Marquis of Halifax : *The Character of a Trimmer* (in *Works*—ed. Raleigh).

John Milton : *Areopagitica*.

John Locke : *Second Treatise on Government ; Letter concerning Toleration*.

James Harrington : *Oceana* (ed. S. B. Liljegren).

- (e) *English Political Ideas, 1715–1815.*

H. St. John (Viscount Bolingbroke) : *The Idea of a Patriot King. A Dissertation on Parties*.

David Hume : *Essays* (ed. Green and Grose (II–IX in Part I and I, II, VII, XII–XVI in Part II)).

Edmund Burke : *The Present Discontents ; Conciliation with America ; Reflections on the French Revolution ; Thoughts on Scarcity*.

Jeremy Bentham : *Fragment on Government*.

Thomas Paine : *Rights of Man* (Parts I and II).

- (f) *French Political Ideas, 1715–1815.*

Voltaire : *Lettres sur l'Angleterre* (ed. G. Lanson) ; *Essai sur les Moeurs*.

Montesquieu : *Lettres Persanes ; Esprit des Lois*. Bks. 1-12.
 Rousseau : *Discours sur l'origine de l'inégalité ; Du Contrat Social ; Lettres écrites de la Montagne*.
 Sieyès : *Qu'est-ce que le Tiers-Etat ?*
 Condorcet : *Tableau historique du Progrès de l'esprit humain*.
Declaration of Rights ; Constitutions of 1791, 1793.
 Buonarroti : *Histoire de la Conspiration des Egaux*.

(g) *German Political Thought, 1780-1848.*

Immanuel Kant : *Kleine Schriften zur Geschichtsphilosophie Ethik und Politik* (ed. Karl Vorlander).
 J. G. Fichte : *Der geschlossene Handelsstaat ; Reden an die deutsche Nation ; Die Staatslehre*.
 G. W. F. Hegel : *Grundlinien der Philosophie des Rechts ; Gesellschaft, Staat, Geschichte* (ed. F. Bulow).
 F. List : *Das nationale System*.
 K. Marx and F. Engels : *The Communist Manifesto*.

(h) *English Political Thought, 1815-1939.*

James Mill : *Essay on Government*.
 J. S. Mill : *Liberty, Representative Government*.
 J. F. Stephen : *Liberty, Equality, Fraternity*.
 Matthew Arnold : *Mixed Essays*.
 T. H. Green : *Principles of Political Obligation*.
 B. Bosanquet : *Philosophical Theory of the State*.
 Sidney Webb and Others : *Fabian Essays*.
 Graham Wallas : *Human Nature in Politics*.
 L. T. Hobhouse : *Elements of Social Justice*.

(i) *French Political Thought, 1815-1939.*

F. Lamennais : *Paroles d'un croyant*.
 Fourier : *Pages Choisies* (ed. Ch. Gide).
 Saint-Simon : *Doctrine de Saint-Simon* (ed. Halévy et Bougle).
 L. Blanc : *Organisation du Travail*.
 C. Dunoyer : *Liberté du Travail*.
 P. J. Proudhon : *Confessions d'un Révolutionnaire*.
 A. Thiers : *De la Propriété*.
 Louis Napoleon Bonaparte : *Idées Napoléoniennes*.
 C. Maurras : *Enquête sur la Monarchie*.
 G. Sorel : *Réflexions sur la Violence*.
 L. Blum : *Sur l'échelle humaine*.

(j) *American Political Thought, 1776-1939.*

A. de Tocqueville : *Democracy in America* (World's Classics)
 A. Hamilton, etc. : *The Federalist*.
 H. S. Commager : *Documents on American History* (New York, 1946).

(ii) *The Government of Great Britain (advanced).*

A knowledge will be required of the main institutions, central and local. Students should pay special attention to recent developments in Parliamentary Government (including the party system), the civil service, nationalized industry, and the newer fields of public administration and planning, with particular reference to contemporary problems.

(iii) *Comparative Government.*

All students will be expected to show detailed knowledge of the constitution and governments of France, the United States of America, and of one alternative of those set out below :—

(Candidates must state, when applying for approval of candidature, which option they select.)

- (a) The Governments of India, Pakistan, and Ceylon. (Commonwealth relations will be included in the study of these regions.)
- (b) The Governments of Canada, New Zealand, Australia and South Africa. (Commonwealth relations will be included in the study of these regions.)
- (c) Selected European Governments—to be prescribed. [Until further notice, the Governments of Western Germany, Switzerland and Belgium will be prescribed for this paper.]
- (d) The Government of Soviet Russia.
- (e) The Government of Dependent Territories.

(iv) *Political and Social Theory.*

The place of the individual citizen in the modern community. The basis of political and social obligations. The criteria of values. Forces which shape these criteria. The theory of rights. Philosophies of freedom and constitutional government. Criticisms of constitutional government, and of democracy and freedom. Limitations upon individual right and governmental right. Nations and Nationalism. Emergence of political communities with authority reaching beyond the claims of the nation-state. Political power and ethical obligation. Political power and economic organization. The ethical and related problems arising from the contact of advanced and primitive societies. The concepts of civilization and progress. The sociological approach to political and social philosophy. Philosophic analysis of the structure of a modern community. Significance of history in political and social philosophy.

(v) *One of the following :—*

(a) *Constitutional History since 1660* (syllabus as for paper (v) (b) *Economic History (Modern)*).

(b) *Administrative Law.* I. The nature of administrative law. The separation of powers. Public and private law. Droit administratif.

The legislative powers of the administration. Bills, Clauses and Adoptive Acts, provisional orders, statutory instruments, special procedure orders ; schemes, proposals and plans ; bye-laws.

The judicial powers of the administration. " Administrative " and " quasi-judicial " powers. Types of administrative institutions exercising judicial powers.

The executive powers of the Administration.* The distribution of powers amongst Government Departments.

II. Parliamentary Control of the administration. The division of Parliamentary time. Control over legislative and executive powers.

Control of the administration by the Judiciary. The use of mandamus, certiorari, prohibition. Natural justice. Administrative discretion, *ultra vires* and " unreasonable exercise ". Statutory appeals and applications to the High Court.

III. Crown liability.

IV. Local Government. Structure, finance, and functioning.* Statutory powers and duties. Legal liability.

V. Public corporations. Statutory provisions. Legal status, powers and privileges. *Ultra vires*.

[Note :—An elementary knowledge of the English Legal System and of British Constitutional Law will be presumed and candidates are advised not to select this subject unless they have taken Elements of English Law (Parts A and B) in Part I.]

*Subjects marked with an asterisk are dealt with in outline only.

(c) *Public Finance* (syllabus as for paper (iv) (a) Economics, Analytical and Descriptive).

9.—*Sociology*

(i) *General Sociology, i.e., Theories and Methods of Sociology.*

The development of Sociology since Comte. The influence of biology on Social Theory. The role of psychology in sociological explanation. The use of anthropological and historical data in sociology. The value and limitations of the comparative method. The classification of social aggregates and institutions and the analysis of social processes. The concepts of culture and civilization. Theories of social development, arrest and decay. The nature of sociological generalizations. The methods employed in the investigation of contemporary society.

(ii) *The Contemporary Social Structure of England and Wales.*

[Note.—From time to time other areas may be prescribed as additional options.]

The recruitment, distribution and composition of the population. Households and families. Family characteristics. Family and poverty.

The educational process. Ability and opportunity. The changing structure of education.

The entry to employment. The recruitment of the professions. Occupational and social mobility. The structure of occupations. Occupation, status and levels of living. The State in relation to levels and standards of living.

Groups—religious, professional and others. The relation between group and community. Social stratification and group consciousness.

(iii) *Comparative study of one of the following topics :—*

(a) *Morals and Religion.*—Scope and methods of comparative religion. Psychological analysis of the religious attitude. Theories of the social functions of religion. Comparative study of moral ideas and practices. Relations of morals and religion. The bearing of religious beliefs on social institutions.

[Note.—Use will be made of material drawn from the principal religions and moral codes, concerning one of which students will be expected to show some specialized knowledge.]

(b) *Marriage and the Family.*—The use of the comparative method in the study of marriage and the family. The relation of family and kinship groups to the wider society, with special reference to the pattern of authority and social control. Family structure in relation to economic organization and social stratification.

The links between the psychological and sociological approaches to the study of the family.

[Note.—Comparative material will be drawn from the record of Roman civilization, feudal and early capitalist European society, and contemporary Britain, France and U.S.A.]

(c) *Property and social class*, with special reference to England and Wales and the U.S.A.—Historical development of the institution of private property. Comparison with feudal property relations. The rise of corporate ownership. The divorce of ownership from control. Kinds and distribution of property, public and private. Property and power under contemporary conditions. The social function of private property.

Class and status. The relation of property to social class. Criteria of status. Class consciousness. Class conflict. Class and power in

contemporary society ; the bureaucracy, the proletariat, the middle classes. Social mobility.

(d) *Political Sociology*.—Factors in the making of the state. The relations of the state to other institutions. The influence of social and economic conditions on political institutions. Comparative study of party systems. Sociological and geographical study of representation. The comparative study of political change and revolution.

(e) *Urban Sociology*.—The development of cities and of urbanism. Types of cities and their functions. The selective aspects of urban structure. Rural urban relations. The ecology of the city and the process of urban expansion. Urban life and social structure. The intellectual and political aspects of urban life. The objectives of urban planning.

(iv) One of the following :—

(a) *Demography* (syllabus as for papers (iv) and (v) (a) Statistics).

(b) *Social Psychology*.—Relations between Sociology and Psychology. Self-regarding and other-regarding elements in human nature. Sympathy, co-operation, competition, aggression. Social factors in the formation of personality. Psychological analysis of group structure. Group sentiments and group consciousness. Theories of group mentality. Public Opinion and factors affecting its formation. Methods of investigating Public Opinion. Suggestion. Propaganda. Group differences in intelligence. Relative influence of heredity and environment. The Psychology of Family Relationships. Psychological aspects of Property.

(c) *Social Anthropology*.—This paper will include questions on history of anthropological theory and its development in relation to other social sciences ; also questions on the various aspects of the structure of simpler societies.

(d) *Criminology*.—Conception of Crime. Functions and Methods of Criminology. Criminal types and causal factors in crime ; physical ; psychological ; social and economic factors. Special problems ; juvenile and female delinquency.

Penal philosophy and psychology, especially meaning and objects of punishment. Penal history. The modern English penal system and the criminal courts.

(v) *Social Philosophy*.

Ethics as applied to problems of social organization. Rights and Duties. The theory of justice, distributive and corrective. Responsibility. Liberty and Equality. The ends and limits of State action. Compulsion and consent. Ethical aspects of Marriage and the Family. Ethical aspects of Property. Ethical aspects of the relations between States.

10.—*Geography*

The examination will consist of five written papers, and the inspection by the examiners of the original note-books and evidence of field work. Material specimens should not be submitted. The examiners simply require clear records of evidence that the candidate has received instruction in field-work or has gained the necessary knowledge and experience by carrying out a proper programme of field-work on his own initiative.

(i) *The Physical and Biological Background of Human Geography*.

An outline survey of the physical geography of Land, Air and Ocean, and of major biological distributions as constituents of the human environment.

(ii) *Advanced Economic Geography with special reference to Industry.*

The geography of production in a modern economy with particular reference to the selection and utilization in production of the physical conditions in the light of economic conditions. Geographical application of distinctive economic principles including the evaluation of geographical margins of production.

(iii) and (iv) *Advanced Regional Geography.*

The concept of regional method and its development, with special reference to the British Isles, Western and Central Europe, and *either* Monsoon Asia, *or* North America, *or* Africa.

The relevant cartographic aspects and methods as applied to all these subjects are to be regarded as integral parts of the subjects.

(v) *One of the following :—*

(a) *Historical Geography.*—(1) A general study of the inter-relation between man and his physical environment in historical time, to be illustrated by specific instances. (2) A more detailed study of the historical geography as thus defined of *one* of the following : The British Isles, Western and Central Europe, The Mediterranean Region, North America.

(b) *Political Geography.*—(1) A general study of the interaction between geographical factors and the State since the early nineteenth century. This study will include the following aspects : territorial organization ; frontiers and boundaries ; demographic considerations ; and strategic factors.

(2) A closer study of the political geography, as indicated above, of *one* of the following :— Europe (exclusive of the U.S.S.R.), Africa, Monsoon Asia, North and Central America, The U.S.S.R.

(c) *The Geography of Agriculture.*—Geographical and economic factors concerned in the organization of agricultural distributions with particular reference to specialization of area.

(d) *The Economics and History of Transport* (syllabus as for paper (v) (c) International Economics).

(e) *Applied Geography.*—The application of geographical methods of survey and analysis to current problems.

(Candidates must state, when applying for approval of candidature, which areas they select in papers (iii) and (iv) and (v) (a) or (b).)

II.—Statistics

(i) and (ii) *Theory of Statistics, including computational methods.*

Collection of data. The processes of statistical deduction ; fallacies of interpretation.

Frequency distributions and their properties. Binomial, Normal, Poisson and other particular distributions.

Interpolation and graduation. Curve fitting. Analysis of Time Series.

Association, contingency and correlation. Regression and correlation analysis for two and for several variables.

General theory of sampling and of sampling distributions. The χ^2 , t , z and F tests. The elements of statistical inference ; tests of hypotheses.

Elements of the analysis of variance and covariance.

Mechanical aids to computation. General principles and use of calculating machines and punched card equipment.

(iii) *Economic and Social Problems, treated statistically.*

The statistical treatment of problems in the economic and social field, with particular reference to demography ; social surveys ; wages, earnings and the cost of living ; employment, production and consumption ; international trade and the balance of payments ; national income and social accounting.

(iv) and (v) *Two of the following :—*

(a) *Demography*.—Vital statistics (including biometry), sickness and mortality, reproduction rates and other measures of fertility. Enquiries by census and by sample. Population trends and projections. The history of population growth.

(b) *Actuarial Statistics*.—Actuarial treatment of statistical data ; decremental and other rates ; Life Tables. Elementary principles and practice of graduation.

(c) *Economic Statistics*.—Analysis of time series. Theory and practice of index numbers. Problems of sampling. General methods and problems of econometrics. Construction of national income and social accounts. The balance of payments.

(d) *Social Statistics*.—Design and analysis of census and sampling enquiries. Questionnaires and methods of interviewing. Surveys of social environment, behaviour and opinions. Elements of factorial analysis. Problems of index numbers. Family budgets ; wages, earnings and the cost of living.

[*Note*.—Logarithm tables will be provided by the University and slide rules may be brought to the examination in all papers in this subject.]

12.—*International Relations*

Besides pre-supposing a sufficient appreciation of the matters covered by alternative subject The Structure of International Society in Part I, this subject includes :—

(i) *International History.*

Diplomatic history of the nineteenth and twentieth centuries, with special reference to the evolution of international political organizations.

(ii) *International Relations (General).*

A more intensive analysis of the relationships between states and peoples and of the forces and factors by which they are affected ; the geographical and strategic aspects of international affairs ; the inter-relationship between politics at the domestic and international levels ; the philosophical and psychological approaches to international relations, including the relevant political theory and philosophy of law.

(iii) *International Institutions.*

The development and working of diplomatic and consular machinery ; the growth and forms of international technical co-operations ; the origins, structure and functioning of the League of Nations and the United Nations organization, of the International Labour Organization and the other “ specialized agencies ”, and of the former Permanent Court of International Justice and the existing International Court of Justice ; present-day problems of international organization.

(iv) and (v) *Any two of the following :—*

(a) *International Law* (syllabus as for alternative subject 10), an adequate knowledge of which will also be pre-supposed in papers (i), (ii) and (iii) above.

(b) *International History—Special Subject.*—Negotiations for an Anglo-French Pact, 1921–22.

Reference should be made to :—

Cmd. 2169, 1924

Papers concerning the negotiations for an Anglo-French Pact.
Documents diplomatiques concernant la garantie de sécurité contre une agression de l'Allemagne.

Jordan, W. M. : *Great Britain, France and the German Problem.*

Wolfers, A. : *Britain and France between two Wars.*

(c) *The Problem of International Peace and Security.*—Closer comparative study of the United Nations organization and the League of Nations with a certain allowance for differential emphasis, in terms of individual preference, as between (a) the political and legal, and (b) the economic and social, aspects of their respective activities.

(d) *Philosophical and Psychological Aspects of International Relations.*—The ideas on the nature of international relations that are shown in the teaching of Herder, Kant, Fichte, Hegel, Marx, Mazzini, and their latter-day spiritual legatees ; the ideologies, theologies and scepticisms of our time in their relevance to international life ; the bearing of modern insights into the motivation of political behaviour upon the interpretation of diplomatic events.

(e) *Geographical and Strategic Aspects of International Affairs.*—The elements of political and economic geography in their bearing on the relations between states ; relationships of land masses and oceans and their political significance ; implications of shape, size, position, climate, population, and economic resources of states and territories ; frontier problems. Sea, air and land as means of communication, travel and transport. Use and misuse of political geography in influencing opinion for political and strategic ends. The role of strategic aims and anxieties in the outlook of states and the preoccupations of statesmen. Total war and planned economy. Interdependence of sea, air, land and economic strategy. New technological developments and their influence in diplomacy and war.

(f) *The Interplay between Politics at the Domestic and International Levels* (with special reference to the problems of Western Europe, the North Atlantic and the British Commonwealth of Nations).—The appreciation of international problems in the particular light of trends of feeling and opinion, the movement of events, and other conditioning factors within the countries concerned. Comparative constitutional practices and methods of political action in their bearing on the determination of foreign policies. Dependence of governments upon the support or acquiescence of bodies of sectional opinion. Popular memories and established educational techniques as contributing to special climates of opinion. Influence of business, the services, trade unions and other organized interests, the press and other opinion-forming agencies. Importance of such factors as anti-clericalism, Little-Englandism, hyphenated Americanism.

(g) *Sociology of International Law.*—International Society as context for an effective legal order. International Law as a social phenomenon and theories as to its binding force. Types of international law. The circumstances and consequences of the expansion of the European law of nations into a universal legal system. Relations between International Law and other legal systems, sociologically viewed. Influences contributory to the creation of international obligations. The guardianship of international public order, with

special reference to the position of the major powers. Motivations of State behaviour in relation to international law, and the problems of group delinquency and punishment. The impact of social reality upon lay and professional thinking on international legal matters. The authority, value and prestige of international courts. Conditions and forms of the further development of international law. The potentialities of law as an element of international integration.

(h) Either : *Political and Social Theory* (syllabus as for paper (iv) Government).

or *An Approved Modern Foreign Language* (syllabus as for alternative subject 11 in Part I).

13.—*Social Anthropology*

(i) *General Principles of Social Anthropology.*

Scope, methods and techniques ; theories of Cultures and Society including relations with environment, biology and psychology. Social and Culture Change. Social structure, criteria for analysis of groupings, residence, sex, age, descent, occupation. Analysis of institutions ; roles of family, lineage, clan, territorial and other organizations.

(ii) *Economic and Political Systems of Simpler Societies.*

Organization of economic activities ; land tenure and other property rights. Conceptions of wealth and capital. Organization of labour. Principles of exchange and of allocation of production. Political organization in states and stateless societies. Public opinion, chieftainship, councils and executive organizations. Concept of sanctions. Civil and criminal law of primitive societies. The relations of law and custom and morality.

(iii) *Moral and Ritual Systems of Simpler Societies.*

Social values ; cosmological systems ; religion and society, belief, dogma and ritual. Demarcation of religion and magic ; types and components. The relation of mythology, totemism, witchcraft, etc., in primitive societies.

(iv) *Ethnography of Special Areas.*

Descriptive and comparative studies in relation to the branches of Social Anthropology outlined in the previous sections. Candidates will also be required to show special knowledge of the literature dealing with the simpler cultures of *one* major area. Approved areas are :—

- (a) Eastern Africa, approx. from N.25° to S.15° ;
- (b) Central Africa, approx. from N.5° to S.15° ;
- (c) Western Africa, approx. from N.20° to zero and West of 15° E ;
- (d) Southern Africa, S. of approx. 10° S. ;
- (e) America, north of Mexico (Amer-Indian and Eskimo cultures) ;
- (f) India (tribal cultures) ;
- (g) South-Eastern Asia ;
- (h) Pacific Islands.

(Candidates must state, when applying for approval of candidature, which area they select.)

(v) *One of the following :—*

- (a) *General Sociology* (syllabus as for paper (i) Sociology).
- (b) *Social Philosophy* (syllabus as for paper (v) Sociology).
- (c) *Social Psychology* (syllabus as for paper (iv) (b) Sociology).
- (d) *Principles of Economic and Social Geography* (syllabus as for alternative subject 9 in Part I).

- (e) *Logic and Scientific Method* (syllabus as for alternative subject 3 in Part I).
- (f) *Demography* (syllabus as for papers (iv) and (v) (a) Statistics).
- (g) *Social Statistics* (syllabus as for papers (iv) and (v) (d) Statistics).
- (h) *An Approved Modern Foreign Language* (syllabus as for alternative subject 11 in Part I).

MASTER OF SCIENCE (ECONOMICS)**REGULATIONS FOR THE REGISTRATION OF EXTERNAL STUDENTS FOR HIGHER DEGREES**

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma or postgraduate certificate will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry to the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and withdraws, fails, or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required to cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted. A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed in the Regulations, obtain the necessary entry papers, and return them to the University with the examination fee.

FEES

								£	s.
Registration Fee	..	..	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	..	..	2	2

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the examination (a) each candidate must have obtained the degree of Bachelor of this University not less than two academic years previously ; in exceptional cases this interval may be reduced ; (b) each candidate who has not obtained First or Second Class Honours at the B.Sc.(Econ.) or B.Com. Examination of this University in a Special Subject or Group deemed appropriate to his proposed M.Sc. (Econ) subject will, unless specially exempted, be required to pass a qualifying examination, which will normally consist of a prescribed paper or papers of the B.Sc.(Econ) Examination, and to reach a certain standard therein ; and (c) each candidate must have been registered as an External Student for the M.Sc.(Econ) Examination at least twelve calendar months before the last date of entry.

2. Candidates who have obtained the M.Sc. (Econ.) Degree in one subject may enter again in another subject on complying with the regulations in all other respects.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the fourth Monday in May, provided that if the fourth Monday in May be Whit-Monday the examination will commence on the following Tuesday.

ENTRY TO EXAMINATION

The candidate list closes on 1 February. Any External Student duly registered for this examination may make his entry at any time during the preceding six weeks. Every candidate, when making his entry, must send the original copy of the approved syllabus. Three copies of the dissertation or thesis must reach the University by 1 March. Two copies must be bound in accordance with the regulations obtainable from the External Registrar.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Every candidate must pay a fee of £15 15s. A candidate who is permitted to re-enter with exemption from thesis or written papers shall be charged half the ordinary M.Sc. (Econ.) fee for re-entry.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. *Refund of Fees.* A candidate who withdraws from the examination after the last date of entry but not later than 15 April may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations, p. x).

TIME TABLE

The order of the examination will be sent to candidates as soon as practicable after the entry closes.

SCHEME OF EXAMINATION

1. Not less than one year before he desires to enter for the examination the candidate shall submit for the approval of the Council for External Students the title of the subject in which he proposes to present himself. Applications must be submitted in duplicate on the prescribed form and must include a clearly stated syllabus of the subject.

2. The Council's approval of title and the approved syllabus of the subject, whether in their original or in an amended form, will be communicated to the candidate in writing, and on this the examination will be based. This syllabus of the subject must be returned to the University when the candidate makes his entry.

3. Except in Geography the examination shall consist of four written papers, one of which shall be an essay paper on the selected general subject, and one of which shall have reference to an approved section of the general subject. In place of these two papers, however, candidates may submit a thesis or dissertation written on the approved topic. In addition candidates may, at the discretion of the examiners, be required to present themselves for an oral examination. Candidates in Geography must submit a dissertation in substitution for the essay paper and paper on the approved section. Theses and dissertations must be written in English.

4. If the examiners consider that a candidate's thesis or dissertation is adequate, but that he has not reached the required standard in the written portion of the examination, they may, if they think fit, recommend that the candidate be exempted on re-entry from presentation of a thesis or dissertation. Similarly, if the examiners consider that the candidate has reached the required standard in the written portion of the examination, but that his thesis or dissertation is not adequate, they may, if they think fit, recommend that he be exempted on re-entry from the written portion of the examination. In both of the above cases the examiners may, if they so desire, examine the candidate again orally when he re-enters for the examination.

5. A candidate who has been exempted from re-examination in the written papers, may, if the examiners see fit, be permitted to re-present his revised thesis or dissertation for examination within a period of six months from the date of the recommendation of the examiners.

SUBJECTS

The following is a list, arranged under group headings, of the general subjects which may be offered. Other subjects may be submitted for approval in exceptional circumstances.

Geography

The detailed Economic Geography of an area chosen from, or commensurate with one of the following :—

- (a) The British Isles. The North Sea and its Coastlands.
- (b) The Mediterranean Lands.
- (c) Western and Central Europe (excluding (a) and (b) above and the U.S.S.R.).
- (d) The U.S.S.R. and Central Asia.
- (e) The Monsoon Lands of Asia.
- (f) The U.S.A. and Canada.
- (g) Mexico. Central and South America.
- (h) Africa (south of the Sahara), and Australia and New Zealand.

or

Some Major Aspect of Geography, chosen from or commensurate with the examples following :—

- I. Agricultural Geography.
- II. The Geography of Industry.
- III. The Historical Geography of an approved country or major region for one of the following periods :—
 - (a) Ancient.
 - (b) Mediaeval.
 - (c) Modern—either before 1800 or after 1800.
- IV. Population Problems in their distributional aspects (including migration and urban geography).

Economic History

- Early Mediaeval (1000-1300).
- Late Mediaeval (1300-1485).
- Tudor and Early Stuart (1485-1642).
- Mid-seventeenth to Mid-eighteenth Centuries (1642-1760).
- The Industrial Revolution (1760-1830).
- The Nineteenth Century (1830-1914).

Political Science

- Greek and Roman Political Theory.
- Mediaeval Political Theory from 476 to 1200.
- Mediaeval Political Theory from 1200 to 1500.
- Political Theory in the Sixteenth and Seventeenth Centuries.
- Political Theory from 1689 to 1815.
- Political Theory since 1815.
- Comparative Central Government (Federal and Unitary).
- Comparative Local Government.

Sociology

Social institutions.
Comparative study of religious and moral ideas.
Psychological aspects of sociology.
Biological aspects of sociology.
Social philosophy.

Economics (including Banking, Commerce and Business Administration)

The General History of Economic Thought.
The Population Question (including the history of the theory and some acquaintance with vital statistics in modern times).
The Distribution of Income (between economic categories and between persons, including the history of the theory and some acquaintance with the relevant statistics in modern times).
The Theory of Value (including history of the theory).
The Structure of Modern Industry.
Problems of Monopoly (theoretical and descriptive).
Industrial Fluctuations.
Problems of Wages and Wage Regulation (theoretical and descriptive).
Capital and Interest.
International Trade (including the theory of International Trade and some acquaintance with the relevant statistics in modern times).
Public Finance.
Economic Functions of the State.
Economic Aspects of Social Institutions.
Monetary and Banking Theory (historically and comparatively treated).
The History, Present Organization and Problems of Money and Banking (treated comparatively).
An Approved Period of Monetary and Banking History.
The Organization and Problems of the Long-Term Capital Market (including the theory and practice of Stock Markets).
Economic Problems in Agriculture.
Trade of a Particular Region.
Organization and Regulation of International Commerce.
Administration and Economic Aspects of Public Utilities.
Business Administration.
Marketing.

Transport

Development, organization and inter-relation of means of Inland Transport.
Economics of Railways.
Economics of Roads and Road Transport.
Economics of Shipping and Docks.

Statistics

Mathematical Statistics : Frequency groups and curves, sampling.

Mathematical Statistics : Correlation.

Applied Statistics : Demographic.

Applied Statistics : Social (income, wages, prices, etc.).

Applied Statistics : Commercial (trade, production, prices, etc.).

International Law and Relations

International Law (Peace, War and Neutrality).

International Relations.

A Phase of the History of International Relations in the Nineteenth and Twentieth Centuries.

NOTIFICATION OF RESULT

1. A list of candidates who pass to the satisfaction of the examiners shall be published at the University.

2. A copy of the Pass List will be sent to each successful candidate. An individual communication will be sent to each unsuccessful candidate.

THESES AND DISSERTATIONS

Copies of all successful theses or dissertations, together with any subsidiary contributions submitted, will be deposited for reference in the University Library.

Any copies of theses or dissertations which are not required by the University after the examination has been completed will be returned to the candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in July.

2. A diploma for the Degree of M.Sc. (Econ.) under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

RESEARCH FUND

The Senate has at its disposal a Research Fund from which grants may be made to individuals for the provision of materials and apparatus for specific projects of research. Any External graduate or student for an External Higher Degree who desires to be considered as an applicant for a grant should in the first place communicate with the External Registrar.

DOCTOR OF PHILOSOPHY

Regulations for the Degree of Ph.D. are contained in a separate pamphlet which may be obtained on application to the External Registrar.

DOCTOR OF SCIENCE (ECONOMICS)

1. Every candidate for the Degree of Doctor of Science (Economics) as an External Student must have obtained as an External Student in this University :—

- (i) The B.Sc. (Econ.) Degree ; and
- (ii) the M.Sc. (Econ.) or M.Com. or Ph.D. Degree in the Faculty of Economics. Nevertheless, a candidate may, in exceptional circumstances, be exempted by the Senate, on the grounds of published work, from the requirement of obtaining the M.Sc. (Econ.), M.Com. or Ph.D. Degree as an External Student.

2. The Degree is awarded only for work of a high standard such as would give the candidate an authoritative standing in his particular line of research. The work should afford definite evidence of the candidate's ability to initiate and conduct or direct research of such a standard.

In these Regulations the term "published" shall mean printed as a pamphlet or book on sale to the public through booksellers or in a periodical. The purpose of requiring publication is to ensure that the work submitted is available to informed criticism. To this end the University may, when necessary, withhold the award of the Degree for a period of not more than one year from the date of the candidate's entry for the Degree.

3. A candidate may make application at any time for the Degree and must at the same time submit evidence of his qualifications, such evidence to consist of published papers or books containing original contributions to the advancement of knowledge. A substantial amount of the work submitted must be independent work published in the candidate's name alone. If conjoint work is submitted the candidate must produce satisfactory evidence as to the extent to which he was responsible for the initiation and conduct or direction of such conjoint work. The candidate is required to indicate what part, if any, of the work has been submitted for a Degree in this or any other University by himself or, in the case of conjoint work, by any of his collaborators.

4. The examiners may, at their discretion, require the candidate to present himself for an interview.

5. Every candidate must apply to the External Registrar for an entry form, which must be returned, duly completed, with a fee of 20 guineas (£21) and accompanied by four copies of such printed contributions to scientific knowledge as he may desire to submit.

Candidates are warned that, in view of the Summer Vacation, the result of any entry submitted later than 1 May is liable to considerable delay. All candidates should give preliminary notice of intention to enter three months before sending in their entry forms.

6. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

7. A candidate who is not recommended for the award of the Degree will be required on re-entry to comply with the Regulations in force at the time of his re-entry.

8. After the report of the examiners shall have been approved by the Senate the External Registrar shall publish a list of candidates on whom the Degree has been conferred.

9. A Diploma for the Degree of D.Sc. (Econ.) under the seal of the University shall be delivered to each successful candidate.

A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

UNIVERSITY OF LONDON



REGULATIONS

FOR DEGREES IN

COMMERCE

for External Students

For examinations to be held up to 1954 only. Regulations for examinations to be held under the new scheme in which the B.Com. degree is merged with the B.Sc. (Economics) degree are published separately.

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Candidates for the Degree of Bachelor of Commerce as External Students are required to satisfy the minimum University and Faculty entrance requirements, have been registered as External Students preparing for the Degree of B.Com., and to pass the Intermediate and Final Examinations.

The standard of the Final Examination is that which would normally be required of a whole-time student after a course extending over three academic years after completing the minimum University and Faculty entrance requirements.

B.COM. EXAMINATION

The Final Examination in Commerce will be held for the last time in June 1954.

The examination is common to Honours and Pass candidates. Successful candidates will be awarded First or Second Class Honours or a Pass Degree. Candidates who have obtained the Degree of B.Com. whether Pass or Honours, are not permitted to re-enter with a view to improving their class.

A candidate who obtained a B.Com. Pass Degree prior to 1934 will be permitted, on one occasion only, to re-enter with a view to Honours ; but the name of any such candidate, if he fails to obtain Honours, shall not appear on the pass list.

QUALIFICATIONS FOR ADMISSION

To be admitted to the B.Com. Examination each candidate must (a) have been registered as an External Student preparing for the Degree of B.Com., (b) have passed or been exempted from the Intermediate Examination in Commerce at least one academic year previously, and (c) have obtained approval of candidature for the B.Com. Examination as an External Student.

A candidate unsuccessful in Part II of the examination under the old regulations in 1935 will on re-entry be required to take the whole examination under the new regulations.

DATE OF EXAMINATION

The examination shall commence on the first Thursday after 5 June.

APPROVAL OF CANDIDATURE

Candidates should normally apply for Approval of Candidature during the period October-December of the year next but one preceding that in which they propose to take the examination and not later than 1 December. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 1 December, application may be accepted after this date on payment of a late fee of £1 1s., which is not returnable, but no application will be accepted after 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 21 December. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 January and the candidate list will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.	d.
Whole examination	12	12	0
Supplementary subject	2	2	0
Foreign language taken in advance	10	6	

Fees paid between 1 September 1949 and 1 September 1952 for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September 1952 and 1 September 1954 ; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank, Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations, p. ix).

SCHEME OF EXAMINATION

1. Candidates shall be examined in the following :—

I. **Economics** (three papers).

(a) Principles.

(b) Applied.

(c) Economic History of the Great Powers and the British Empire.

II. **Foreign Language** (two papers and oral. The oral will include a test in extempore translation both from and into the foreign language).

III. **Elements of Commercial Law** (one paper).

OR

[Only for candidates taking Group B with Organization of Commerce and Industry as an alternative subject.]

A Second Foreign Language (two papers and an oral. The oral may include a test in dictation).

IV. Group A Banking and Finance (four papers).

1. Banking and Finance (two papers).
2. Accounting, *or*
Applied Statistics (one paper).
3. Business Administration, *or*
Business Risks and History and Law of Insurance, *or*
History of the Modern World, *or*
Law of Banking (one paper).

OR

Group B Trade and Transport (four papers but candidates offering a second foreign language will have five papers and an oral).

1. Economics and Geography of Trade.
2. Economics of Transport.
3. Organization of Commerce and Industry in a special area (to be specified by candidates on registration and entry), *or* Shipping, *or* Inland Transport, *or* A Second Foreign Language.
4. Accounting, *or*
Business Administration, *or*
Applied Statistics, *or*
Cost Accounting and Statistics of Inland Transport, *or*
History of the Modern World.

OR

Group C Industry and Public Utilities (four papers).

1. Business Administration.
2. Economics of Modern Industry, *or*
Economics of Public Utilities.
3. Industrial Law, *or*
Administrative Law with relation to Public Utilities.
4. Accounting (including Cost accounting), *or*
Applied Statistics, *or*
Applied Psychology.

OR

Group D Economics and Geography of Trade (four papers and an oral).

1. Economics and Geography of Trade (one paper).
2. A second Foreign Language (two papers and an oral. The oral will include a test in extempore translation both from and into the foreign language).
3. Organization of Commerce and Industry in a Special Area, *or*
Accounting, *or*
Business Administration, *or*
Applied Statistics, *or*
History of the Modern World (one paper).

OR

Group E Accounting (five papers).

1. Accounting (including Costing and Auditing) (two papers).
2. Business Administration (one paper).
3. Law of Commercial Associations and Law of Income Tax for Accountants (one paper).
4. British Central and Local Government (one paper).

2. The examination shall be conducted in the main by means of printed papers ; but, for the purpose of ascertaining the competence of the candidate to pass, the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

3. No candidate may proceed to Group E at the Final Examination unless he has either passed Elements of English Law at Intermediate Commerce or obtained exemption from that subject in accordance with the Regulations.

4. An adequate knowledge of statistical method will be required of all candidates in the Final Examination papers.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

6. There are no exemptions from any part of this examination.

SPECIAL CONDITIONS FOR EXAMINATIONS IN FOREIGN LANGUAGES

1. Candidates may, if they so desire, enter for examination in the compulsory language at any examination held between passing Intermediate Commerce and entering for the Final Examination. Candidates who enter for the entire examination and, though failing in the examination as a whole, nevertheless satisfy the examiners in the compulsory language, will on re-entry be exempted from that subject.

2. A second language offered as a subject of Group D, or as an alternative subject by a candidate taking Group B, must, however, be taken at the Final Examination itself and cannot be offered separately at an earlier examination, nor can exemption from examination in such a language be granted to a candidate in virtue of having satisfied the examiners in that language on the occasion of an unsuccessful entry to the examination.

3. The option of taking a second foreign language in place of Elements of Commercial Law may be exercised only by candidates taking Group B with Organization of Commerce and Industry.

The standard shall be equivalent to one year's work after Intermediate and the examination shall consist of two papers and an oral examination.

4. The standard and syllabus for the second language under Group D shall correspond exactly to that of the compulsory foreign language.

5. The standard of the Language Paper for candidates offering Group E shall be equivalent to that of 3 above.

6. All candidates offering two languages must offer French, German or Spanish as one of their languages.

7. No candidate shall be permitted to offer his native language as an approved language, unless he is ruled to be bilingual (see para. 10 below).

8. A candidate whose native language is not English shall be required to take English as a foreign language.

9. English shall not be taken as a foreign language by English, Scottish, Irish, or Welsh students, whether resident in the British Isles or not.

10. In the case of bilingual students, and in any other case of doubt, the matter shall be referred to the Principal, who will decide whether or not the student is required to offer English. In all cases the Principal's decision shall be final.

SUPPLEMENTARY SUBJECTS

Candidates who have passed the B.Com. Examination are admissible for examination in one or more supplementary subjects.

TIME TABLE

The examination will be conducted in the order shown on the time table, which will be sent to each candidate.

NOTIFICATION OF RESULT

1. On 8 August the External Registrar shall publish a provisional list of the candidates who shall have passed, arranged in alphabetical order in each of the four categories, First Class Honours, Second Class Honours (Upper Division), Second Class Honours (Lower Division), and Pass.

2. A copy of the Pass List will be sent to each successful candidate and an individual communication to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the B.Com. Examination who have completed more than half of the examination are eligible to apply for an Aegrotat degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the examination.

(3) An Aegrotat Degree will not be awarded unless the examiners consider that, in the work which the candidate has submitted at such part of the examination as he has attended, he reached a standard which, if also reached in the remainder of the examination, would have qualified him for the award of a degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher degree on complying with the Regulations for such degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists cannot be laid before the Senate for approval until towards the end of October.

2. A diploma for the Degree of B.Com. under the seal of the University will be delivered to each successful candidate.

A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are confined to those who were awarded a degree during the preceding year.

SYLLABUSES

I—(a) Principles of Economics

The principles of economics, including theories of population, production, value, distribution, money and banking, and international trade, and with special reference to their bearing upon current problems.

Some knowledge of statistical findings in their relation to economic theory will be expected.

(b) Applied Economics

Practical economic problems of contemporary interest, including :— Long and short term capital market. Monetary systems. Foreign exchange and international trade. Economic problems of distribution of commodities : organized markets, wholesale and retail trade. Machinery for collective purchase and sale, including labour. Industrial relations. The size of the business unit. Location and concentration of industry. Industrial combinations. Public ownership and control. Price and cost problems in industry and trade. Economic problems of transport and public utility undertakings. Public finance : the economic effects of taxes and subsidies ; public expenditure. Industrial fluctuations.

(c) Economic History of the Great Powers and British Empire

The subject is to be interpreted as the history of the rise of industrialism in the British Empire, France, Germany, Russia and the United States of America, and the resultant world economy. The main topics to be covered are as follows :—

1. Economic after-effects of the French Revolution, leading to changes in the status of persons, freedom of movement and free choice of occupation, compared with the free trade movement in the United Kingdom.

2. Industrial leadership of England and her commercial and imperial policy. Economic predominance of France on the Continent up to 1870. Evolution of Germany from a tariff mosaic into a united empire and an industrial state of the first rank. Economic transformation of Russia from a medieval to a modern state. Development of the U.S.A. from an agricultural disunited country into a united industrial empire and effect of her wheat exports on the agricultural development and policy of Europe.

3. Internal and external effects of transport developments. Railway and shipping policies and tariff changes.

4. Labour problems of the different countries and attempts to deal with them.

5. Growth of economic imperialism in the later nineteenth century and main agencies of development in the British Dominions and tropical countries.

II—Foreign Languages

(See page 2205)

In all languages, colloquial and commercial knowledge will be required.

In all languages, other than English for Foreign Students, the syllabus will be as follows :—

The syllabus of the Intermediate Examination, the examination being carried to a higher standard, viz. :

Grammar : translation : composition.

Composition will include (i) translation from English, and (ii) some form of free composition.

Set books will not be prescribed.

The syllabus prescribed in English for Foreign Students is that of the Intermediate Examination carried to a more advanced stage, viz. :

Grammar and composition. Précis and paraphrase or explanation. Idiomatic and commercial expressions. Reading and conversation.

The examination will include an essay paper.

Candidates offering Oriental and African languages will be required to use the native script except as follows :—

Malay.—Both the native (Arabic) and the Roman scripts ;

Swahili.—Only the Roman script.

The following languages have been approved :—

Afrikaans.	Hindi.	Roumanian.
Arabic.	Irish.	Russian.
Bengali.	Italian.	Spanish.
Burmese.	Japanese.	Swahili.
Chinese.	Malay.	Swedish.
Danish.	Modern Greek.	Tamil.
Dutch.	Norwegian.	Telugu.
French.	Persian.	Turkish.
German.	Polish.	Urdu.
Gujarati. ¹	Portuguese.	

In all languages there will be an oral examination. In the compulsory language for candidates offering Groups A, B, C or D, and in the second Foreign Language at Group D, the oral will include a test in extempore translation both from and into the foreign language. In the compulsory language for candidates offering Group E and in the second language offered as an alternative at Group B, the oral may include a test in dictation.

III—Elements of Commercial Law

Elements of Commercial Law (treated from a commercial rather than a legal standpoint)—including the principles of contract, sale of goods, insurance, carriage of goods by land and sea, negotiable instruments, partnerships, companies, agencies, statutory bodies, and bankruptcy as affecting business contracts.

IV—Group A—Banking and Finance

(1) Banking and Finance

The theory of money and credit : the history of banking and currency in England with particular reference to the period since 1797 ; the development, recent history and present organization of the currency and credit systems of the leading countries of the world, treated comparatively ; the organization and working of security markets, and the technique of company finance ; the technique of international payments ; the theory of the foreign exchanges considered in relation to the theory of money and the theory of international trade.

(2) *either* Accounting

The accounts of traders at home and abroad, including foreign currencies and accounts of branches.

or Applied Statistics

Sources of statistics ; actual construction of tables, diagrams, etc., based on the original data (official or private) of statistics of trade, production, costs, sales, prices, wages, index-numbers ; the writing of reports and précis ; use of mechanical aids to calculation. (Students' note-books to be seen by examiners.)

[*Note*.—Logarithm Tables will be provided by the University, and Slide Rules may be brought to the examination.]

¹Standard Gujarati must be used in all written work. Parsi Gujarati will be permitted in the oral examination, but more credit will be given for Standard Gujarati.

(3) **Business Administration**

The purpose and structure of business organization, both inside and outside the business unit ; a comparison of practice as regards organization in the principal branches of business enterprise.

The special features of the organization and of the administrative and economic problems of large-scale businesses :—the delegation of functions, the allocation of responsibility, and the machinery of control. The specialized forms of organization within the business unit for (a) management and the determination of business policy, (b) purchasing, (c) manufacturing, (d) finance, (e) selling, (f) recruitment, promotion and retirement of staff.

Buying, financing and selling policy in various conditions of the market, with special reference to the price problems of industrialists and wholesale and retail traders.

The effects of predictable and non-predictable variations in demand and supply on the operation of a business.

Trade associations and their influence on market conditions.

or **Business Risks and the History and Law of Insurance**

Analysis of the incidence of risk in business transactions ; methods of reducing and eliminating certain elements of risk, and of transferring its incidence, exemplified by business practice in industry, trade and finance. The theory of insurance and its scope ; the history of insurance development (marine, fire, life, social and general) broadly treated. Administration and management problems of insurance businesses. Relations of insurance firms to the State. A knowledge will be required of the law relating to insurance in the United Kingdom, and of the legal principles involved, sufficient to make insurance developments intelligible.

or **History of the Modern World**

The subject comprises the internal history and international relations of the states of Europe and America from 1789, together with the relations of those states with the peoples of Africa and Asia, and the development of the self-governing dominions of the British Empire. The main topics to be studied are as follows :—

1. The prelude to the nineteenth century ; Reforming monarchs and the old regime. The French Revolution and its consequences. The work of Napoleon and the Vienna settlement.

2. The progress of the Revolution in nineteenth-century Europe ; The struggles for political democracy and economic equality and the national movements. National and international socialism.

3. International relations in the world of great states ; the attempt at government by congress (1815–25) and later action by the concert of Europe. The evolution of the Eastern Question. Origins of the Great War (1914–1918). Peace settlements following the Great War and subsequent international action.

4. Western imperialism and the new nationalism of the East : the expansion of Russia in Asia. The development of British India and the growth of a national movement. The great powers and China. The making of an Eastern great power, Japan. The partition of Africa. The growth of self-government within the British Empire. Comparative study of colonial methods.

5. The New World : later development of Europe's revolted colonies, to include the broad outlines of Latin American history, the main incidents in the internal development of the U.S.A. and the growth and activity of the latter as a great power.

or Law of Banking

The Legal Relationship between Banker and Customer. Current Accounts, Deposit Accounts, Trust Accounts, Overdrafts. The Pass Book. The Bankers' Books Evidence Act, 1879. Cheques and documents analogous to cheques. The payment and collection of cheques. The payment of cheques by mistake. Forged cheques. Securities for Advances in general, Pledges and Mortgages of Negotiable Instruments, Stocks and Shares, Life Policies. Interests in Land and Documents of Title to Goods. Bankers' Commercial Credits. The Realization of Securities, Bankers' Guarantees. The legal position in the event of the insolvency of the customer. An outline of Stock Exchange Law.

Group B—Trade and Transport**(1) Economics and Geography of Trade**

General movements of International Trade. The economic and geographical conditions of the Production, Transport and Marketing of the more important commodities entering into overseas trade. The character and organization of the chief commercial routes and the trade of the great ports of the world with their hinterlands.

(2) Economics of Transport

The functions of transport in the economic and social organizations. Transport as an industry and as the provider of a public service, with a brief historical background.

The organization of the means of transport—relations to the State, to one another, and to the public. The production of the transport including the finance, general lay-out, and suitability to the traffic demand.

Theories of rates and fares. Their application in practice, particularly the modifications imposed by outside authority.

Influence of transport costs and services on the location of industries and the development of trade.

The means of transport to be studied are railway, road, inland waterway and sea transport.

(3) The Organization of Commerce and Industry in a special area

The basic economic and geographical conditions of the area, especially as affecting the distribution of population and the location of industries. The main problems of commercial and industrial organization. Transport, marketing and finance in relation to trade. Tariffs and commercial policy. Commercial statistics.

AREAS.—*Either* Europe (candidates may concentrate mainly on Eastern or Western Europe).

or North and South America.

or India and the Far East.

or Africa and Australasia.

or Shipping

The subject includes Ports and Docks as well as Shipping.

The forms of organization for the provision and working of ships, ports and docks. The administrative and economic problems involved therein. The ship in relation to its work. Theories of rates and fares

and their application in practice. Character and use of the chief Shipping documents. Warehousing and the transport of commodities of a perishable and special character. Marine Insurance. The aims and methods of State intervention. A knowledge of shipping law is required.

or **Inland Transport**

The scope of this subject will be railway, road and inland waterway transport with an historical background.

The constitution and special problems of each of the means including the production and marketing of the transport. Competition and co-operation within each means, and with the other means of transport. The aims and methods of State intervention, including a knowledge of the law of carriage.

or **A Second Foreign Language** (*for syllabus see page 2207*)

(4) **Accounting or Business Administration or Applied Statistics** (*for syllabuses see Group A*) *or*

Cost Accounting and Statistics of Inland Transport

The application of the principles of cost accounting to the provision of inland transport. The estimation of the relative economy of materials, and types of equipment and appliances.

The application of statistical methods to the control of inland transport, its production, and sale. The compilation of the statistics and their interpretation. Their use as a means of administrative and governmental control. The making of international comparisons.

or **History of the Modern World** (*see Group A*)

Group C—Industry and Public Utilities

(1) **Business Administration** (*see Group A*)

(2) **The Economics of Modern Industry**

Industrial structure. The financing of industrial enterprise. The depreciation of industrial assets. The location of industries and of the producing unit. The lay-out of fixed plant and equipment. Technical invention and the working of the patent system. The purchasing of raw materials. Works management : progressing of work, and stock control. The marketing of industrial products. The pricing of products. Industrial fluctuations. Industrial Risks. Problems of labour supply—selection, apprenticeship and training ; remuneration ; working conditions ; collective agreements ; State intervention in industry.

or **Economics of Public Utilities**

The constitutional and special problems of public utility undertakings including Gas, Electricity and Hydraulic Power, Water Supply and Irrigation, Transport (particularly urban transport and docks), and Communications. The aims and methods of State intervention.

(3) **Industrial Law**

The subject-matter is the law governing the relations between employers and employed. The Common Law of master and servant and statutory modifications. The principles of workmen's compensation. Legislation affecting hours of work, safety, health, wages, and other working conditions of employed persons. Legislation specially affecting

workers in particular classes of industries, e.g., mines, railways, shops, factories, workshops, etc. Protective provisions relating to particular classes of workers, such as women, young persons, and children. Social insurance. The Law of Associations—restraint of trade—trade unions. Collective contracts—strikes and lock-outs—picketing—unlawful breaches of contract—civil conspiracy—interference with contractual relations. Arbitration and conciliation. Comparison with foreign experience.

or **Administrative Law in relation to Public Utilities**

The scope and nature of Administrative Law. The characteristics of legislation, administration and adjudication. The organs of administration and the sources of their authority. The delegation of legislative and judicial functions. The forms of administration. The principles involved in the conception of administration according to law.

Administrative powers over persons and property in relation to public utilities, including gas, water, electricity, transport, hydraulic power and irrigation. The legal regulation of public utilities carried on by private undertakers. The control of utilities administered by public authorities. The problems arising out of the control of public utilities (a) by the legislature, (b) by the executive, (c) by the judiciary.

(4) Accounting (including Cost Accounting)

The accounts of traders at home and abroad, including foreign currencies and accounts of branches. The preparation and presentation of cost accounts of industrial undertakings.

or **Applied Statistics** (*see Group A*)

or **Applied Psychology**

The evolution of business in its psychological bearings. Native and acquired abilities, instincts, emotions, temperament and character. Psychological conditions affecting the routine and lay-out of offices and works. Illumination, ventilation and temperature. Worry, over-strain and boredom. Incentives. Organization of personnel. Vocational guidance, selection and training. Psychological factors in the advertisement, distribution and design of products.

Some knowledge of the methods employed in investigating the above will be expected.

Group D—Economics and Geography of Trade

(1) Economics and Geography of Trade (*see Group B—1*)

(2) A Second Foreign Language (*see page 2207*)

(3) Organization of Commerce and Industry (*see B—3*)

or **Accounting**

or **Business Administration**

or **Applied Statistics**

or **History of the Modern World** (*for syllabuses see Group A*)

Group E—Accounting

(1) Accounting (including Costing and Auditing)

Paper I.—The application of accounting principles to the accounts of commercial and financial undertakings of various kinds, including associations and companies governed by statutory regulations. Holding and subsidiary companies. The law and custom governing the publication of accounts. The accounts of trustees and executors. The treatment of income tax in accounts.

Paper II.—The principles underlying the preparation and presentation of cost accounts of industrial undertakings of various kinds. Costing as an instrument of management control. Uniform costing schemes. Standard and marginal costing.

The general principles of auditing. The appointment, remuneration and removal of Auditors by sole traders, partnerships, companies and other bodies. Rights and obligations arising under statute and at common law. Auditing Case Law. Investigations.

(2) **Business Administration** (*see Group A*)

(3) **Law of Commercial Association and Law of Income Tax for Accountants**

A more advanced treatment of those parts of the law of partnership and of company law which specially concern the Accountant, e.g., Distribution of profits and losses between partners, Rights and Liabilities of incoming and outgoing partners, dissolution of partnership.

Rights, duties, and liabilities of auditors, in general and with special reference to partnerships and companies.

Formation of companies.

Legal requirements as to registers and books of account to be kept and as to financial information to be disclosed, by companies.

Parent and subsidiary companies.

Rights of various classes of share capital.

Alteration and reduction of share capital.

The concept of divisible profits with reference to company dividends.

Arrangements with creditors on members, reconstruction, and amalgamation of companies.

General principles governing receivership and winding-up.

Introduction to the law of Income Tax, e.g., the legal concept of "income."

The five Schedules of the Income Tax Act, and Schedule D in particular.

The Administration of Income Tax.

Returns, assessment, deduction at source, and demand.

Allowances, reliefs, etc.

"Profits and gains" distinguished from "additions to capital."

Permissible and non-permissible deductions: Revenue expenditure and capital expenditure.

Wear and tear allowance and obsolescence.

Taxation of new businesses, discontinued business, and in case of succession to business.

Treatment of losses.

Principles governing sur-tax, including "sur-tax on companies."

(4) **British Central and Local Government**

The fundamental characteristics of the British Constitution (that it is unitary and not federal; representative and not republican); the Conventions; the Cabinet system; the membership, organization and functions of the House of Commons and the House of Lords; the nature and function of Parties; the electoral system.

The Administrative System including:—an outline of the organization of Government Departments and their powers; the structure and functions of the Civil Service; the financial administration of Britain.

The Judiciary and the Rule of Law. The organization and functions of the Courts and the nature of English Administrative Law.

An outline of the system of local government and the relation between the central and local authorities.

MASTER OF SCIENCE (ECONOMICS)

Bachelors of Commerce of this University may proceed to the M.Sc. (Econ.) Degree in accordance with the Regulations in Economics for External Students.

DOCTOR OF PHILOSOPHY

Regulations for the Degree of Ph.D. are contained in a separate pamphlet which may be obtained on application to the External Registrar.

DOCTOR OF SCIENCE (ECONOMICS)

Bachelors of Commerce of this University who have also obtained the degree of M.Com. or M.Sc. (Econ.) may proceed to the D.Sc. (Econ.) Degree in accordance with the Regulations in Economics for External Students.

UNIVERSITY OF LONDON



REGULATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE (SOCIOLOGY) for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTES

1. Candidates for the Degree of Bachelor of Science (Sociology) as External Students are required to have satisfied the minimum University and Faculty entrance requirements, to have been registered as External Students for the Degree, to hold qualifications as set out below for Direct Entry to the Final Examination, and to pass the examinations in the Principal and Subsidiary subjects.

2. The standard of the examination in the Subsidiary subject is that which would normally be required of a whole-time student after a course extending over two academic years subsequent to completing the Direct Entry requirement. The standard of the examination in the Principal subject is that which would normally be required of a whole-time student after a course extending over three academic years subsequent to completing the Direct Entry requirement.

3. A student who has passed the Intermediate Examination in Arts of this University or who is qualified for direct entry to a Final Examination in the Faculty of Arts will be required to proceed to the B.A. Honours Degree in Sociology instead of the B.Sc. (Sociology) Degree.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the B.Sc. (Sociology) Examinations in the Principal or in the Subsidiary subject, each candidate must :—

(a) have satisfied the minimum University and Faculty entrance requirements and have been registered as an External Student preparing for the Degree ;

(b) *Either* (i) have obtained a Higher School Certificate recognized by the Ministry of Education ;

or (ii) have passed at a General Certificate of Education Examination or Examinations conducted by one of the approved University Examining Bodies in three subjects at the Advanced Level ;

or (iii) have passed an Intermediate, Preliminary or First Examination of this University.

or (iv) have obtained an approved professional qualification.

(c) have obtained approval of candidature for the examination.

2. Candidates who have obtained the B.A. Honours Degree in Sociology or the B.Sc. (Economics) Degree with Sociology or Social Anthropology as the Special Subject are not permitted to proceed to the B.Sc. (Sociology) Examination.

FACULTY REQUIREMENTS

Candidates who have satisfied the minimum entrance requirements of the University are deemed to have satisfied the requirements for registration as a student in the Faculty of Economics.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the first Thursday after 3 June.

REGISTRATION

1. Candidates must have been registered as External Students preparing for the Degree not less than three academic years before the date of their Final Examination. Candidates should normally apply for registration during the period September-December in the year next but two preceding the year in which they propose to enter for examination in the Principal subject.

2. Candidates will be required to submit with their application for registration a detailed statement of their proposed course of study and of their previous training (if any) in their subject. This statement must be made on the appropriate form to be obtained from the External Registrar. Each application for permission to register for the B.Sc. (Sociology) Degree will be considered individually. Applications will not be accepted from candidates resident outside the United Kingdom.

APPROVAL OF CANDIDATURE

Candidates must apply for approval of candidature during the period September-December of the year next but two preceding the examination and not later than 31 December in that year.

Provided that the Council for External Students are satisfied about the reasons for failure to observe these instructions, late applications may be accepted on payment of a Late Fee of £1 1s., which is not returnable, but no application will be accepted after 31 December in the year preceding the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 20 December. Entry forms will not be despatched by post from the University after 24 January, and the candidate list will be closed on 1 February.

Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole examination	13	13
Principal subject	11	11
Subsidiary subject	2	2

2. A candidate who is exempted from examination in his Subsidiary subject will be required, on the occasion of his first entry to the examination in his Principal subject, to pay a fee of £13 13s.

3. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account".

4. A candidate who withdraws from the examination after the last date of entry but not later than 1 May, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (*see* General Regulations, p. ix).

1. The examination shall be conducted in the main by means of printed papers ; but the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

2. The examination in the Principal subject will consist of ten written papers on *one* of the following three Options :—

1. Theories and Methods of Sociology.
2. Statistical Methods in Social Investigation.
3. Social Institutions (I).
4. Social Institutions (II).
5. Ethics.
6. Social Philosophy.
7. Social Psychology.
8. } *Either* Modern England (2 papers) ((i) Social Structure,
 (ii) Social History)
9. } or Two papers on one of the following :—
 - A. Some other Modern Community to be specified from time to time (2 papers as for Modern England).
 - B. An Oriental Civilization, ancient, mediaeval or modern.
 - C. Graeco-Roman Civilization.
 - D. Civilization of the Middle Ages :—
 - (1) Political and Social Institutions.
 - (2) Religions and Ethics.
10. } *Either* (i) Demography
 or (ii) Criminology.

(Candidates must state, when applying for approval of candidature, which options they select in Papers 8, 9 and 10. A candidate will not be permitted to offer option B, C or D of Paper 9 unless he possesses a preliminary qualification in an approved language.)

For those wishing to specialize in Social Administration :—

1. Theories and Methods of Sociology.
2. Statistical Methods of Social Investigation.
3. Social Institutions (II).
4. Social Administration (I).
5. Social Administration (II).
6. Social Philosophy.
7. Social Psychology.
8. } *Either* Modern England (2 papers) ((i) Social Structure,
 (ii) Social History)
9. } *or* Some other Modern Community to be specified from time
 to time (2 papers as for Modern England).
10. *Either* (i) Demography
 or (ii) Criminology.

(Candidates must state, when applying for approval of candidature, which options they select in papers 8, 9 and 10.)

Option C

For those wishing to specialize in Social Anthropology :—

1. Theories and Methods of Sociology.
2. Statistical Methods in Social Investigation.
3. Social Institutions (II).
4. Social Anthropology (I).
5. Social Anthropology (II).
6. Regional Social Anthropology : an approved area.
7. Ethics.
8. Social Philosophy.
9. Social Psychology.
10. *Either* (i) Demography
or (ii) Criminology.

(Candidates must state, when applying for approval of candidature, which option they select in paper 10.)

3. The examination in the Subsidiary subject (Economics) will consist of two written papers.

4. The examination in the Subsidiary subject may be taken on the same occasion as the Principal subject, or at any Examination previously.

5. A candidate who enters for examination in the Principal and Subsidiary subjects on the same occasion and fails in the Subsidiary subject will, if the examiners have recommended him for First or Second Class Honours in the Principal subject, be credited provisionally with such Honours and allowed to enter for re-examination in the Subsidiary subject alone, on one subsequent occasion only, and within one year from the publication of the Pass List for the examination in question ; if he is then successful, the Degree will be awarded. A candidate who is recommended for Third Class Honours in his Principal subject and fails in his Subsidiary subject will not be credited with any part of the examination.

6. Failure in the Principal subject does not involve re-examination in the Subsidiary subject, whether a pass has been obtained in the Subsidiary subject earlier than, or on the same occasion as, the examination in the Principal subject.

7. All answers to examination questions shall be written in English unless instructions are given to the contrary.

EXEMPTIONS

No exemptions are given at this examination except on the results of examinations of this University as follows :—

1. Candidates who have obtained the B.A. Degree either as Internal or as External Students are exempt from examination in the Subsidiary subject provided that they have passed in Economics in their B.A. examination.

2. Candidates who have obtained the B.Sc.(Econ.) or B.Com. Degree either as Internal or as External Students are exempt from examination in the Subsidiary subject.

3. Candidates who as Internal Students have passed the examination in Economics as a Subsidiary subject in accordance with the conditions with regard to syllabus and otherwise, that were then in force for External Students, may be credited with that subject for the purpose of the External Degree.

4. Candidates who, while failing in the examination as a whole, have satisfied the examiners in two subjects at the B.A. General Examination and have passed in Economics, may apply for exemption from examination in the Subsidiary subject. All such applications will be considered individually on their merits.

TIME TABLE

The examination will be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 8 August the External Registrar shall publish a provisional list of candidates who shall have passed, arranged in alphabetical order in each of the categories First Class Honours, Second Class Honours (Upper Division), Second Class Honours (Lower Division), Third Class Honours.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) The following candidates are eligible to apply for an Aegrotat Degree :—

Candidates at the B.Sc.(Sociology) Examination

- (i) who have entered for examination in both Principal and Subsidiary subjects and have completed more than half of the Examination.
- (ii) who, having already passed in the Subsidiary subject, have entered for examination in the Principal subject only and have completed more than half of the examination in the Principal subject.
- (iii) who, having been previously credited with First or Second Class Honours in the Principal subject, have entered for re-examination in the Subsidiary subject only and have completed half of the examination in such Subsidiary subject.

(2) Applications from, or on behalf of, students must be accompanied by a medical certificate, and should reach the External Register within seven days from the last day of the Examination.

(3) An Aegrotat Degree will not be awarded unless the Examiners consider that, in the work which the candidate has submitted at such part of the Examination as he has attended, he reached a standard which, if also reached in the remainder of the Examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or Higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.
2. A diploma for the Degree of B.Sc.(Sociology) under the seal of the University shall be delivered to each successful candidate.
3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are confined to those who were awarded a degree during the preceding year.

SYLLABUSES

SOCIOLOGY : THEORIES AND METHODS

The development of Sociology since Comte. Biological factors in social life. Problems of heredity and environment : studies of twins, foster children and orphans ; distribution and trend of intelligence ; the social use of intelligence ; genetic and social aspects of race problems. The role of psychology in sociological explanation : the study of personality types in relation to social structure. The use of anthropological and historical data in sociology : the use of personal documents in sociological investigation. The value and limitations of the comparative method. The classification of social aggregates and institutions and the analysis of social processes : the concepts of social class and social status in the analysis of social structure. The concepts of culture and civilization. Theories of social development, arrest and decay. The nature of sociological generalizations and the methods used in testing them.

STATISTICAL METHODS IN SOCIAL INVESTIGATION

1. *Elementary Statistical Methods.*—Collection, definition and tabulation of data. Approximations and error. Frequency groups, time series and graphical representation. Measures of average and dispersion. Index numbers. The elements of the analysis of time series. The elementary theory of regression and correlation. Sampling of proportions. Samplings for Totals and Averages from a normal population. Elementary theory of sampling design. Stratification.

2. *Sources of Social Statistics in the United Kingdom.*—Population and vital statistics. Man-power. Health and housing. Education. Crime. Nutrition. Cost of living. The nature and limitation of these statistics and the application of elementary statistical methods to them.

3. *Techniques and Problems in Social and Sociological Surveys.*—Planning social investigations. Questionnaires and interviewing. Interviewer bias. The analysis and interpretation of survey data.

Note.—Students will be expected to be familiar with the technique and results of the major social and sociological surveys in Great Britain and the United States.

[NOTE.—Logarithm tables will be provided by the University and slide rules may be brought to the examination in this subject.]

SOCIAL INSTITUTIONS

Papers I and II : (Paper II will be devoted mainly to the more complex societies.)

(i) The main forms of family structure : the family and the kindred ; maternal and paternal descent ; the joint family ; regulation of marriage.

(ii) Types of political structure ; the clan and tribe ; monarchy ; feudalism ; the City State ; the forms of the modern state.

(iii) Forms of aggregation : urban and rural developments. Patterns of urban life.

(iv) Development of social control : Retaliation and the Blood feud ; the growth of public justice and rational procedure ; individual and collective responsibility ; punishment and the prevention of crime.

(v) The forms of property and economic organization : common, collective and private property, and their inter-relations.

(vi) Social differentiation : slavery and serfdom ; nobility ; caste ; the main varieties of modern class structure.

(vii) Religion and other beliefs in their bearing on social relations ; relations of religion and morals.

(viii) Relations between intellectual development as seen in the control of natural forces and social change : levels of social development.

ETHICS

(i) The psychological presuppositions of ethics ; impulse, desire and will. The moral sentiments.

(ii) The principal types of ethical theory : the intuitionist, rationalist and empiricist approach to ethical problems. The theory of evolution applied to morals.

(iii) The relations of sociology to ethics. The problem of moral progress.

SOCIAL PHILOSOPHY

Ethics as applied to problems of social organization. Rights and Duties. The theory of justice, distributive and corrective. Responsibility. Liberty and Equality. The ends and limits of political action. Compulsion and consent. Ethical aspects of Marriage and the Family. Ethical aspects of Property. Ethical aspects of the relations between States.

SOCIAL PSYCHOLOGY

Relations between Sociology and Psychology. Self-regarding and other regarding elements in human nature. Sympathy, Co-operation, competition, aggression. Social factors in the formation of personality. Psychological analysis of group structure. Group sentiments, and group consciousness. Theories of group mentality. Public Opinion and factors affecting its formation. Methods of investigating Public Opinion, Suggestion, Propaganda. Group differences in intelligence. Relative influence of heredity and environment. The psychology of Family Relationships. Psychological aspects of Property.

MODERN ENGLAND

(i) *Social Structure*

The recruitment, distribution and composition of the population. Households and families. Family characteristics. Family and poverty.

The education process. Ability and opportunity. The changing structure of education.

The entry to employment. The recruitment of the professions. Occupational and social mobility. The structure of occupations. Occupation status and levels of living. The Government in relation to levels and standards of living.

Groups—religious, professional and others. The relation between group and community. Social stratification and group consciousness.

(ii) *Social History*

The social development of industrialism since 1815.

The Sources and Character of Industrial Progress.—The social background of technical developments ; the rise of the factory system and industrial concentration and combination : the growth of capital and the adaptation of labour ; mass production and new forms of private enterprise ; the growth of public enterprise ; the growth of capital, the agencies of capital formation and the historical problems associated with them ; the new systems of communication ; the functions of the State in economic development ; the changing forms of property.

The Growth of Towns.—The historical problems of urbanization and suburbanization ; immigrant communities and their control ; the rise of town planning and the development of new branches of urban administration ; the growth of urban amenities and the provision for leisure and common enjoyment.

The Class Structure of Industrialism.—The growth and distribution of the population ; the displacement of the landed aristocracy and the growth of the middle classes ; the changing status of the working classes ; occupational specialization, the growth of the professions, and the definition of new occupations ; the family in urban and rural communities ; the economic and social status of women ; the smaller family and the treatment of children ; the shorter working day ; the growth and distribution of the national income ; the change in standards of living ; the evolution of working-class needs ; the development of the agencies of thrift.

The Growth of Democracy.—The redistribution of political responsibility ; the influence of voluntary action and the rise of voluntary associations ; the scope and displacement of philanthropy ; the rise and social functions of the labour and co-operative movements ; the influence of wars on democratic development.

The Development of Social Policy.—The change in social attitudes and its influence on social policy and administration ; the history of the regulation of factories and workshops ; the problems of industrial disease and disability ; the statutory limitation of the hours of labour ; the regulation of the work of women and children ; the development of a system of public education ; the improvement of health and the statutory enforcement of holidays ; the development of the system of national insurance.

DEMOGRAPHY

Vital statistics (including biometry), sickness and mortality, reproduction rates and other measures of fertility. Enquiries by census and by sample. Population trends and projections. The history of population growth.

CRIMINOLOGY

Conception of crime. Functions and methods of criminology. Criminal types and causal factors in crime ; physical ; psychological ; social and economic factors. Special problems : juvenile and female delinquency.

Penal philosophy and psychology ; especially meaning and objects of punishment. Penal history. The modern English penal system and the criminal courts. Problems of crime prevention.

SOCIAL ADMINISTRATION

Paper I.—Development and content of social services ; their relations to the individual, the family and the community. Services to be studied include social security services ; health and rehabilitation ; housing and town and country planning ; education ; treatment of delinquents.

Paper II.—Administration of social services ; organs of administration ; inter-relations between the social services ; statutory and voluntary agencies ; personnel problems.

Note.—Students will be expected to show some knowledge of comparable developments in countries other than Great Britain.

SOCIAL ANTHROPOLOGY

Papers I and II.—Scope and Methods of social anthropology ; theories of culture and society ; analysis of social structure and organization in primitive communities ; occupational and other associations ; stratified groups ; kinships organization and terminology ; types of family structure ; lineage and clan. Marriage and other institutions associated with kinship.

Economic organization : land tenure and property rights ; conception of wealth and capital ; organization of labour ; exchange of goods and services.

Political organization ; legal organization ; relation of law to custom ; moral rules, ritual and belief in relation to the society.

Paper III. Regional Social Anthropology.—The Social Structure of one of the following approved regions :—

- (a) Eastern Africa.
- (b) Central Africa.
- (c) Western Africa.
- (d) Southern Africa.
- (e) America North of Mexico (Amerindian and Eskimo cultures).
- (f) India (tribal cultures).
- (g) South-eastern Asia.
- (h) Pacific Islands.

Subsidiary Subject

ECONOMICS

1. *Principles of Economics*

The principles of Economics, including theories of population, production, value, distribution, money and banking, and international trade.

2. *Applied Economics*

Applications of economic principles to the analysis of contemporary problems of production, trade, labour, money and public finance.

**MASTER OF SCIENCE (ECONOMICS), DOCTOR OF
PHILOSOPHY AND DOCTOR OF SCIENCE (ECONOMICS)**

Candidates who have obtained the Degree of B.Sc.(Sociology) will be permitted to proceed to the M.Sc.(Econ.), Ph.D. and D.Sc.(Econ.) Degrees in accordance with the regulations in Economics for External Students, which may be obtained on application to the External Register.

UNIVERSITY OF LONDON



REGULATIONS

FOR DEGREES IN

ESTATE MANAGEMENT

(Old and Revised Regulations)

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Candidates for the Degree of Bachelor of Science (Estate Management) (Old Regulations) as External Students are required to satisfy the minimum University entrance requirements, have been registered as External Students preparing for the Degree of B.Sc.(Est. Man.), and to pass the Intermediate and Final Examinations.

The standard of the Final Examination is that which would normally be required of a whole-time student after a course extending over three academic years after completing the minimum University and Faculty entrance requirements.

The Intermediate Examination was held for the last time in 1953.

For Revised Regulations see p. 2315.

B.Sc. (ESTATE MANAGEMENT) EXAMINATION

(For examinations up to 1955 only)

The Degree will be awarded to candidates who are successful in both Parts of the Final Examination.

QUALIFICATIONS FOR ADMISSION

To be admitted to Part I or Part II of the examination each candidate must (a) have been registered as an External Student preparing for the Degree of B.Sc.(Est. Man.) (b) have completed the Intermediate Examination in Estate Management not less than one academic year earlier, and (c) have obtained approval of candidature for the B.Sc.(Est. Man.) Examination as an External Student.

To be admitted to both Parts I and II on the same occasion, or to Part I and II as may be necessary to complete the B.Sc.(Est. Man.) Examination, each candidate must (a) have been registered as an External Student preparing for the Degree of B.Sc.(Est. Man.) not less than three academic years earlier, and (b) have obtained approval of candidature for the B.Sc.(Est. Man.) Examination as an External Student.

A candidate referred at the Intermediate Examination will be permitted to enter for his referred subject concurrently with Part I of the Final, provided that he is entering for Part I before Part II, and also provided that if such a candidate fails in his referred subject, no report shall be made on his performance in Part I of the Final.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the second Monday in June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the B.Sc.(Est. Man.) Examination during the period October-November of the year preceding that in which it is intended to take the first part. Candidates taking both parts of the examination on the same occasion should apply for approval of candidature during the period October-November of the year next but one preceding the examination, and not later than 7 December. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 7 December, application may be accepted after this date on payment of a late fee of £1 1s. which is not returnable, but no application will be accepted after 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 21 December. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 January, and the candidate list will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Whole examination	6	6
One Part only	3	3
Supplementary subject	2	2

Fees paid between 1 September, 1949 and 1 September, 1952, for complete exemption from the Intermediate Examination will be set off against the entry fee at the time of entry for the Final Examination taken between 1 September, 1952 and 1 September, 1956; but no such concession will be made to candidates who were partially exempt from the Intermediate Examination and who paid the six guinea fee to include a first entry in one or more subjects.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1., University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix).

SCHEME OF EXAMINATION

1. A candidate may take Part I and Part II on one and the same occasion, or on different occasions, in which case either part may be taken first. If the candidate enters for Parts I and II on the same occasion, and passes in one part but fails in the other, he shall be credited with having passed in the part in which he has been successful.

2. Candidates who have passed Part II under the regulations which prevailed before 1940 will be permitted to complete the examination by taking Part I only under the present regulations, i.e., without examination in Applied Economics.

PART I

Candidates shall be examined in three subjects :—

- | | | | | | |
|---|---|---|---|---|-----------|
| (1) The Theory and Principles of the Valuation of Land and Buildings | . | . | . | . | 2 papers. |
| (2) Principles of Public Finance | . | . | . | . | 1 paper. |
| (3) English Law relating to Land | . | . | . | . | 2 papers. |

PART II

Candidates shall be examined as follows :—

- (4) **Applied Economics** **1 paper.**

One of the following groups of subjects :—

Group A.

- (5) Construction of Buildings, Rural **1 paper.**
 (6) Agriculture **2 papers.**
 (7) Forestry **1 paper and a practical examination.**
 (8) Agricultural Law **1 paper.**

Group B.

- (9) Construction of Buildings, Urban. **2 papers.**
 (10) Town Planning and Estate Development **2 papers.**
 (11) Sanitation **1 paper.**
 (12) Local Government Law **1 paper.**

3. The examination shall be conducted in the main by means of printed papers ; but the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

4. No candidate shall be permitted to pass unless he satisfies the examiners in the practical part as well as the written part of the examination in the subject chosen, and no amount of excellence in the written examination shall be allowed to compensate for deficiency in the practical examination.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

SUPPLEMENTARY SUBJECTS

Candidates who have passed the B.Sc. (Estate Management) Examination are admissible for examination in one or more supplementary subjects.

TIME TABLE

The examination will be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 8 August the External Registrar shall publish a list of the candidates who have passed, arranged in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the External B.Sc. (Estate Management) Examination who have entered for both Parts of the Examination, or for one Part having already passed in the other Part, are eligible to apply for an Aegrotat Degree. In either case the candidate must have completed more than half of the Examination.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the Examination.

(3) An Aegrotat Degree will not be awarded unless the Examiners consider that, in the work which the candidate has submitted at such part of the Examination as he has attended, he reached a standard which, if also reached in the remainder of the Examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

2. A Diploma for the Degree of B.Sc. (Estate Management) under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES

In cases where an Act of Parliament is definitely specified by reference to its date, candidates must also make themselves acquainted with any amending Acts subsequently passed.

The Theory and Principles of the Valuation of Land and Buildings

[Two papers]

The various uses to which land is put, and the income obtainable from such uses. Tenures. Comparison of the value of incomes derived from land with incomes from other sources.

Definitions of value.

The effect on values of demand and supply, and of the state of the money market.

The use and application of the tables used for valuation purposes.

Insurances and the application thereof to meet risks and deferred liabilities.

The outgoings upon property. Necessary deductions in order to arrive at net income.

The valuation of freehold and leasehold property and of all interests therein. The effect of easements, restrictions and adverse rights.

The valuation of annuities held for definite periods and for lives, whether in possession or deferred. Allowance for the accumulative rate of interest differing from the required remunerative rate. Computation of deferred capital value. Allowance for deferred liabilities. The determination of the amounts of premiums to be paid for renewals and extensions of leases and reduction in rent.

Valuations for special purposes, viz. rating, income tax, extinguishment of manorial incidents, mortgage, partition, death duty. Valuations of compensation for land taken, severance and injurious affection, in connexion with the exercise of statutory powers for public or quasi-public purposes, and the prescription of building lines and improvement lines. Compensation for improvements and goodwill as between landlord and tenant.

Principles of Public Finance

[One paper]

1. *Public Income.*

Sources. (i) *Taxation.* The theory of taxation ; direct and indirect taxation. The economic effects of different kinds of taxation :

(a) *National Taxation.* The various forms of National Taxes, their nature and incidence. Taxes on Capital ; taxes on incomes. Relations between National and Local Taxation.

(b) *Local Taxation.* An elementary knowledge of powers and duties of local authorities. The authorities concerned with local taxation and valuation. The nature and incidence of rates. The valuation list, its preparation, revision and amendment. Rateable occupation. Rates and contributions under Land Drainage Act, 1930.

(ii) *Charges* by Central and Local Governments for services and commodities.

2. *Tithe.* The nature of tithes and the Statutes relating thereto.

3. *Public Expenditure.* Objects of National and Local Expenditure. The economic effects of Public Expenditure ; subsidies. Grants-in-aid. The relation between expenditure upon Income and Capital Account.

4. *Public Debt.* Various forms of Public Debt.

The whole to be considered with particular reference to the Ownership and Occupation of Land.

English Law Relating to Land

[Two papers]

Paper 1 (a) *Rights and Duties of Owners and Occupiers of Land.*

Rights and duties of estate owners in regard to buildings, fixtures, boundaries, mines and minerals, trees and crops, game and fish.

Natural rights in respect of air, water and support.

Easements and profits ; acquisition by grant and reservation (express and implied) and by prescription (a) at common law and (b) under the Prescription Act, 1832 ; prevention of acquisition.

Infringement and disturbance of natural rights, easements and profits and the remedies therefor.

Licences ; nature and varieties ; licence coupled with an interest.

Proceedings for recovery of land.

Law of Trespass to Land.

Law of Nuisance.

Law of Negligence.

Duties of occupiers with regard to dangerous property.

The rule in *Rylands v. Fletcher*.

Liability for fire.

Damage by animals.

(b) *Rights and Duties of Landlord and Tenant*.

Different varieties of tenancies ; distinction between tenancies and licences.

Agreement for leases ; when enforceable ; Section 40 of the Law of Property Act, 1925 ; part performance.

Contents of leases ; formal parts ; executions ; stamping ; counterparts.

Covenants ; express and implied covenants ; covenants running with the land ; usual covenants.

Rent ; apportionment ; distress, re-entry for non-payment of rent and other remedies.

Liability for rates, taxes and other out-goings.

Repairs : interpretation generally of the covenant to repair ; measure of damages ; dilapidations ; waste.

Variation of terms ; endorsements.

Assignments ; sub-leases.

Surrender ; forfeiture ; notice to quit ; recovery of possession ; action for use and occupation (details of legal procedure are regarded as being beyond the scope of the course).

Fixtures.

The principal statutes relating to Landlord and Tenant.

The main provisions of the Rent and Mortgage Interest Restrictions Act.

Paper 2 (a) *Sales and Mortgages of Land*.

Contracts for the sale of land ; the vendor's duty of disclosure ; the effect of fraud, innocent misrepresentation and mistake.

The obligations implied in an open contract and in a contract by correspondence.

Interpretation of particulars and conditions of sale ; typical conditions contained in contracts for sale.

Rights of the contracting parties after contract and before completion.

Remedies for breach of uncompleted contract.

Rights and liabilities of the parties after completion.

Restrictive covenants ; their nature ; conditions essential to their enforcement ; " building scheme " ; modification and discharge.

The nature of a mortgage transaction.

The common law form of mortgage.

The borrower's equity of redemption.

Legal and equitable mortgages.

Mortgages of freeholds and leaseholds.

Rights, powers and duties of the parties.

Remedies of mortgagee.

Sub-mortgage.

Mortgages to trustees and building societies.

(b) *Arbitrations.*

The nature of an arbitration.

Arbitrations distinguished from valuations.

Arbitrations compared with actions at law.

References arising from a submission ; the Arbitration Acts, 1889-1934.

The arbitration agreement ; the parties ; the subject matter ; appointment of arbitrators or umpire.

Conduct of an arbitration ; powers and duties of the arbitrator ; principal rules of evidence applicable to arbitrations.

Preparation and publication of award ; method of enforcing and impeaching an award.

Costs.

The application of the Arbitration Acts, 1889-1934 to statutory arbitrations.

References under order of Court (i) for enquiry and report, (ii) for trial.

(c) *Compulsory Purchase and Compensation Acts.*

The right of the State to appropriate land for purposes of public utility or to delegate that power to bodies or corporations.

The taking of land by exercise of the Royal Prerogative.

The taking of land under statutory powers ; procedure by Private Act, General Act, Provisional Order or Compulsory Purchase Order made under the authority of a General Act.

The right to compensation. Distinction between a right to compensation and a cause of action at law.

Principles governing the right to compensation for (i) land compulsorily acquired and (ii) land injuriously affected by the exercise of statutory powers.

The meaning and functions of "The Special Act."

The nature, functions and provisions of the Defence Acts, 1842-1873, the "Lands Clauses Acts" and of the Acquisition of Land (Assessment of Compensation) Act, 1919.

The principles of "recoupment," "betterment" and "set-off."

The taking of part only of property.

Statutory rights of entry on land. Accommodation works.

Rights in respect of mines and minerals in relation to compulsory acquisition of land.

General principles of interpretation of modern compulsory purchase Acts.

Applied Economics

[One paper]

The paper will be divided into three parts, to conform with the three parts of the Syllabus. Part I will be compulsory for all candidates, and they will also be required to take Part II or Part III.

I

The organization of the long and short term capital markets and the system of interest rates. The relation between capital value and annual value of the various kinds of property. Industrial fluctuations and problems of employment and unemployment. Monetary policy and its effect upon values and output. International trade, including commercial policy. Problems of population and labour supply. Risk and Insurance. The control of production and marketing.

II

The demand for farm products with special reference to the United Kingdom.

The size of farms. Economic aspects of land tenure. The finance of farming and of the distribution of farm produce. Agricultural labour. The analysis of farm costs. Fluctuations in farm output ; and their significance in the organization of production.

The marketing of farm products. Grading. The organization of produce markets. Future dealings. Competitive and co-operative marketing. Wholesale and retail market problems. Transport in relation to agriculture.

The State in relation to agriculture. Fiscal policy. Regulation of conditions of production and marketing. Wage regulation.

III

Outlines of the industrial and commercial organization of Great Britain. Occupational and industrial distribution of population. The value of industrial output and its distribution. Royalties.

The size of business undertakings. Problems of cost analysis and of price policy. Invention and the problems of obsolescence and depreciation. Forms of industrial combination. The financing of industry and trade. Public ownership and control of industry. The special problems of public utility undertakings.

The location and concentration of industry. The theory of rent and its application to urban properties. The economic effect of the ordinary actions of governments upon urban properties. Problems of transport and distribution. Wholesale and retail trade.

Construction of Buildings (Rural)

[One paper]

Location, planning and lay-out, construction and maintenance of farm buildings and habitations, roads, fences and field drains. Choice, properties and uses of materials relating thereto.

Relationship between capital costs and anticipated revenue.

Ventilation, water supply, drainage, sanitation and lighting of farm buildings and farm habitations.

Plans, specifications, estimates and contracts for farm buildings and habitations.

Requirements of local authorities and central government departments, affecting farm buildings and habitations.

Agriculture

[Two papers]

General Character of British Agriculture

Soils and their treatment. Physical and chemical characteristics, agricultural characteristics. General soil types of the United Kingdom. Principles of plant nutrition and manuring. Principles of cultivation.

Types of farming and their relation to climate, soils, markets.

Equipment of farm with live and dead stock. Capital and manual labour required. Organization of labour. Utilization of power on the farm.

The purpose and form of farm records and accounts.

Crops

Farm implements and machinery.

Drainage, liming and rotations. Description of crops commonly grown. Their requirements as to climate, soil, sowing, manuring and harvesting.

Temporary and permanent grass. Improvement of pastures. Formation of grassland, choice of seed mixture, sowing, subsequent treatment and management. Haymaking and ensilage. Weeds and their control. The general principles of the control of the more common insect, eelworm and fungoid pests.

Live Stock

The principal breeds of horses, cattle, sheep, pigs and poultry and their special characteristics. Principles of breeding, rearing and management. The principles of nutrition. Home-grown and purchased feeding-stuffs. The production of meat, dairy produce, wool, poultry and eggs.

The general principles of the mode of spread and control of the more important diseases and parasitic infestations of farm animals.

Marketing

The preparation and disposal of farm produce.

Tenant Right

Principles of tenant right, by statute, terms of agreement and customs.

The tenant's claim and the landlord's claim. Common customs, tillages and improvements.

Valuations of tenant right, unexhausted improvements, live and dead stock, etc.

Forestry

[One paper and a practical examination]

The history of English Forestry. The direct and indirect utility of forestry ; duties of the State and of private owners in regard to it.

Climate, soil, situation and aspect in relation to silviculture ; methods of silviculture ; formation and regeneration of woods ; mixed and pure woods, light and shade ; tending of woods ; fencing, draining and development of woodland areas ; formation and treatment of nurseries ; forest roads.

The structure and identification of forest trees.

Control of the more important injurious insects and fungi harmful to forests.

The sale and utilization of forest produce and the industrial uses of wood ; the identification and characteristics of various kinds of timber ; defects.

The felling and conversion of trees and other forest produce ; the transport, seasoning and preservation of timber ; its measurement and valuation ; computation of contents of woodland areas ; calculation of sample trees ; forestry statistics.

Preparation of forest working plans and reports ; methods of preparing financial statements ; law and custom relating to woods and plantations ; rating and taxation ; contracts relating to sales of forest products.

Candidates are required to bring to the practical examination their *original* practical note-books, for inspection by the examiners. These note-books must be taken away by the candidates at the close of the examination.

Agricultural Law

[One paper]

The Law relating to Agricultural Holdings, including contracts of tenancy, rights and liabilities of landlord and tenant, custom of the country, game, trees, mines, minerals and quarries. The principal statutes relating to agricultural holdings.

Rights of Common ; enclosure.

The Law relating to Stock and Crops, including contracts for the sale of animals and goods, conveyance of animals and goods, dangerous animals, general principles of the Agricultural Marketing Acts, statutes relating to the sale of seeds, fertilizers and manures, and to animal and plant diseases.

Law of Highways—types of highway ; modern highway authorities ; ownership of highway ; rights of owner of soil and of public authorities ; creation, stopping up or diversion of highways ; liability for repair and maintenance ; nuisances in connexion with highways ; rights of access to and fencing of highways ; restrictions on use of land adjoining a highway ; restrictions on access to highways ; roadside wastes.

Statutory provisions and bye-laws relating to public health, sanitation and water supply, so far as they affect agricultural property.

Statutory provisions relating to land improvement, land drainage, electricity way-leaves, agricultural credits and housing of agricultural workers.

The Law relating to Small Holdings, Allotments and Allotment Gardens.

The Law of Master and Servant, including insurance of employees.

Construction of Buildings (Urban)

[Two papers]

The construction of residential and simple commercial buildings including all details. The calculation of simple stresses and the determination of the necessary sizes of beams and pillars of timber, steel and reinforced concrete.

Foundations, shoring and underpinning. Alterations to buildings.

Domestic sanitation, including sanitary fittings, waste pipes and drains, sanitary construction and arrangement, water services, drainage of subsoil and the prevention of dampness.

Ventilation, heating and lighting of residential and simple commercial buildings.

The properties and uses of the materials commonly used in building construction and drainage and the methods of testing their quality.

The preparation of specifications for building work, including drainage.

The various forms of contract for building work.

The administration of building works including the nature and use of Specifications and Bills of Quantities, Inviting and accepting Tenders, Notices and applications to Local Authorities, supervision of work in progress and the issue of certificates.

Town Planning and Estate Development

[Two papers]

Town Planning (One paper)

The economic basis of town growth. The evolution of historic towns. Planning of urban and rural estates by great landlords. The evolution of industrial towns. The character and design of the landscape. Recent developments in town planning.

The objects, preparation and presentation of surveys of planning areas.

The preparation and scope of development plans under current planning legislation and of development proposals for new towns.

Procedure under current legislation.

Reservation of land for various purposes. Planning of civic, educational, business and industrial centres, communications, public and private open spaces, airfields and other such civic requirements.

Principles and objects of zoning. Control of development.

Preservation of amenities. Tree planting.

Improvement and re-development of built areas.

Applications for planning consent, and the making and pursuing of objections. Procedure at public inquiries.

Claims for compensation. Development or betterment charges. Compulsory purchase.

Estate Development (One paper)

Factors governing the suitability and maturity of land for building. Importance of encouraging a suitable type of development. Differing types of development.

Requirements of Local Authorities in regard to proposed streets and sewers.

The preparation of estate development schemes.

The effect of statutory provisions on Estate Development including Ribbon Development.

Negotiations with Local Authorities, Town Planning Authorities, Highway Authorities, railway companies and statutory authorities (such as gas, water and electric). Negotiations with adjoining owners and others in regard to rights of way, easements, timber, minerals, adjustments of boundaries, communicating streets, sewers and similar matters.

The planning of Estate roads ; different types, the width and use of the different parts of the roads. The materials used for, and mode of construction of such roads.

The division of land into plots. The grouping of buildings.

The methods of disposal of building land. The financing of building operations.

Sanitation

[One paper]

Water Supply

Sources of supply. The quantity and quality of water required. Rain gauges and the estimation of available rainfall. Filtration, sterilization and other methods of treatment of impure water. Hardness and acidity and methods of reducing these. The general forms and purposes of impounding, setting and service reservoirs, public supply mains and valves. Waste detection.

Sewerage and Sewage Disposal

Sewerage schemes ; separate and combined systems ; the capacity required ; the materials used and methods of construction ; manholes, storm overflows, ejectors, gulleys and other sewerage details ; the ventilation and flushing of sewers. The various methods of disposal of sewage and storm water ; discharge into the sea or tidal estuaries, land treatment, precipitation and bacterial processes. Methods of disposing of sludge. Purification plants for country houses and small communities.

Disposal of Refuse

Nature and quantity of house refuse. Temporary storage. Methods of Collection and Disposal, including controlled tipping, disposal at sea, incineration. Salvaging methods ; utilization and disposal of residuals. Collection, disposal and utilization of trade refuse.

Cleansing of Streets

Street cleansing by hand and machine. Organization and methods of snow clearing.

Local Government Law

[One paper]

Local Authorities. General principles of the law relating to the organization and procedure of local authorities ; general principles governing the central administrative control of local government ; general principles of the doctrine of *ultra vires*, of the control by the courts of local authorities and of the process of statutory interpretation.

Public Health. Public Health Law in so far as it affects owners and occupiers of property, including sewerage and drainage (except sewage disposal and pollution of rivers) ; water supply ; privies, water-closets, cesspits, etc. ; regulation of cellar dwellings ; nuisances ; offensive trades ; regulation of streets and buildings.

Housing. Authorities responsible for housing conditions ; statutory provisions relating to repair, maintenance and sanitary condition of houses and to the closing or demolition of insanitary premises and the demolition of obstructive buildings ; procedure in connexion with Clearance Areas, Re-Development Areas and Improvement Areas, including the acquisition of land and payment of compensation to owners and occupiers affected ; general provision as to the making, form, validity and date of operation of clearance orders and compulsory purchase orders ; re-development and re-conditioning by owners ; statutory provisions for the abatement of overcrowding ; provision of housing accommodation for the working classes ; financial assistance for erection of houses and improvement of housing accommodation ; powers of the courts and of the Minister of Health in relation to Housing. Statutory provisions governing Town and Country Planning and Restriction of Ribbon Development.

Highways and Streets. Types of highway ; the rights of the owner of the soil, the public, public authorities and statutory undertakers ; the creation, stopping up or diversion of highways ; liability for repair and maintenance—the authorities now responsible ; remedies for non-repair ; nuisances in connexion with highways ; extraordinary traffic ; right of access to highways and liability for fencing ; the laying out, making up and taking over of private streets ; restrictions on use of land adjoining a highway ; building lines ; improvement lines ; restriction on access to highway ; owner's right to compensation for such restrictions ; statutory powers to acquire land for construction, widening and improvement of highways.

Notes :

(i) The candidate should have a thorough knowledge of those aspects of the above matters which directly concern owners or occupiers of property, including making of bye-laws, orders and regulations, giving of notices, rights of objection and appeal, and holding of local inquiries. But he will not be expected to study details of procedure or administrative or financial provisions which are mainly the concern of local authorities or of the responsible government department.

(ii) Emphasis will be laid on the general principles of the law rather than upon the details of statutory provisions.

(iii) A detailed knowledge of case law will not be required, but the candidate should be familiar with the leading decisions on the branches of the law mentioned above.

(iv) The matters dealt with will relate primarily to areas outside London but candidates will be expected to know the main differences between the law on the subjects dealt with in London and outside London.

REVISED REGULATIONS**INTRODUCTORY NOTE**

Candidates for the Degree of Bachelor of Science (Estate Management) (Revised Regulations) as External Students are required to satisfy the minimum University entrance requirements, have been registered as External Students preparing for the Degree of B.Sc.(Est. Man.), and to pass the First and the Final Examination.

The standard of the Final Examination is that which would normally be required of a whole-time student after a course extending over three academic years after completing the minimum University and Faculty entrance requirements.

For Old Regulations see p. 2302.

First Examination in Estate Management**QUALIFICATIONS FOR ADMISSION**

To be admitted to the examination, each candidate must (a) have satisfied the minimum University entrance and Faculty requirements, and (b) have been registered as an External Student preparing for the Degree of B.Sc. (Est. Man.).

Students should normally register as soon as they have satisfied minimum University entrance and faculty requirements and commenced a course of study. This should be in the period October to December of the year preceding the examination, and not later than 25 February. **Students who apply to take the Final Examination less than three academic years from the date of registration are warned that an application for late registration, with a late fee of £2 2s. will be necessary when they apply for approval of candidature for the Final Examination.**

FACULTY REQUIREMENTS

Candidates who have satisfied the minimum University entrance requirements are deemed to have satisfied the Faculty requirements for the B.Sc. (Est. Man.) Degree.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the second Monday after 28 June.

ENTRY TO EXAMINATION

The candidate list will be opened on 11 February. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 18 March, and the candidate list will be closed on 25 March.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last day for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES**1. Fees are as follows :—**

							£	s.
Whole examination	..	..	..	..	..	..	6	6
Referred subject	..	..	..	..	..	..	2	2

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 June, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix).

SCHEME OF EXAMINATION

1. The examination shall be a pass examination only in the following subjects :—

Economics (including Accounting), 2 papers.

English Law, 2 papers.

Elements of Geology and Land Surveying, 2 papers and a half-day's practical examination.

Building Materials and Construction, Examination of Course Work.

2. The marks obtained in the First Examination shall be combined with those in the Final Examination for the purpose of the classification in divisions.

3. The examination shall be conducted by means of printed papers ; but the examiners shall not be precluded from putting oral questions to any candidate.

4. Candidates shall not be approved by the examiners unless they have shown a competent knowledge in each of the subjects and in the case of Economics (including Accounting) and Elements of Geology and Land Surveying, in both parts of the subject ; in the case of Elements of Geology and Land Surveying, no candidate shall be allowed to pass unless he satisfies the examiners in the practical part as well as the written part of the examination ; and all candidates must also satisfy the examiners in Course Work in the subject Building Materials and Construction.

5. Course Work in Building Materials and Construction is an essential part of the examination and the course work submitted must be certified by the candidate's teacher or teachers in the subject, if any. Candidates who are studying privately must include with their course work a declaration that it is their own unaided work.

6. Each candidate shall be required to submit his course work for inspection on each and every occasion on which he presents himself for examination, and on each occasion only such course work as is submitted shall be considered by the examiners. Nevertheless a candidate who fails in the examination as a whole but who has satisfied the examiners in course work shall be credited with that course work and exempted from further examination of course work at any subsequent First Examination.

7. All answers to examination questions shall be written in English unless instructions are given to the contrary.

8. A candidate who has passed the First Examination in Estate Management shall not be permitted to re-enter.

REFERENCE

1. A candidate who enters for the whole examination on one and the same occasion, but who fails to reach the required standard in one subject only, may be referred, i.e., he may be permitted to re-present

himself for examination in that subject alone at one or more subsequent First Examinations in Estate Management.

2. The examiners shall recommend that a candidate be referred only if his failure in one subject is not serious and if his performance in the remaining subjects is reasonably good.

3. A candidate who has completed the First Examination after having been referred in one subject, shall be deemed for all purposes to have passed the examination in question on the date of completion.

EXEMPTIONS

There are no exemptions from any part of this Examination.

EXAMINATION OF COURSE WORK

1. Each candidate for the examination is required to send his course work to the External Registrar about one month prior to the commencement of the written examination.

2. Course work, other than drawings, should be submitted in loose-leaf files or bound notebooks. Each loose-leaf file or notebook and each sheet of drawings must bear the name of the candidate, and the full title of the subject. Each page or sheet must be numbered and an index provided. Each separate item of course work must bear the date at which it was completed. All drawings must be kept flat.

3. Course work will be returned to the candidate immediately after the examination.

TIME TABLE

The examination shall be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 19 August the External Registrar shall publish a list of the successful candidates arranged in alphabetical order.

2. A copy of this Pass List will be sent to each successful candidate, and an individual notification will be sent to each unsuccessful candidate. No other communication will be sent to successful candidates.

3. The reports of the examiners and the Pass Lists shall be laid before the Senate for approval in October.

4. Certificates of having passed the examination will not be issued except to qualified students applying for them.

SYLLABUSES

Economics (including Accounting)

Economics

The Economic Structure of the United Kingdom

Population : size, sex and age distribution. Geographical and occupational distribution.

Industrial Structure : relative size of main industries, their location and organisation including agriculture, coal, steel, textiles.

The Labour Market : trade unions and collective bargaining.

International Trade : visible and invisible imports and exports.

National Income and Output : meaning, composition and distribution.

Public Finance : the main sources of revenue and types of expenditure.

Financial Organisation : the commercial banks. The Bank of England. The capital market.

Economic Analysis

Economics as a Social Science. The Economic Mechanism. Economic resources—natural resources, the population factor, technological development and the law of diminishing returns. The characteristics of the industrial community. The economic system and social institutions.

The concept of wealth. National income and expenditure. The distribution of national income.

The price mechanism. The determinants of demand and supply. The concept of economic equilibrium.

The theory of income determination. Saving, investment, consumption and income. Income determination and the level of employment. The theory of money. The theory of international trade. The problem of industrial fluctuations.

Accounting

The principles of double-entry book-keeping, and their application to different types of businesses.

The nature and form of accounting records. The revenue account and the balance sheet. The organisation of an accounting department. Checks against fraud. Capital and revenue. Depreciation. The interpretation of accounts, their uses and limitations for proprietors, lenders and management.

Simple accounting problems of partnerships and limited companies. Elementary problems of business finance, including compound interest calculations.

The accounts of estate companies, farmers, land agents and estate agents. Accounting for problems involving royalties, investments, and other matters pertaining to estate management.

English Law

1. (a) General Introduction

Present organisation and jurisdiction of the Civil Courts and of the Lands Tribunal. Law and Equity. Statute law and case law.

(b) Estates and Interests in Land

The difference between real and personal property.

Tenure : evolution of freehold and leasehold tenures.

The Common Law doctrine of estates in land : freehold and leasehold estates and interests.

General rights and duties of estate owners in regard to buildings, boundaries, mines and minerals, trees and crops, game and fish.

Incorporeal hereditaments.

Characteristics, varieties and acquisition of easements and profits.

Rights in respect of light, air, water and support.

Licences : nature and varieties.

Equitable estates and interests.

Joint tenancy and tenancy in common.

The position (in outline only) of tenants for life under Settled Land Act 1925, and of trustees holding land upon trust for sale.

2. *Principles of Contracts and Torts*

The nature and formation of contracts. Contracts under seal and simple contracts. Offer and acceptance. The doctrine of consideration.

The meaning of "void" "voidable" and "unenforceable." Options to Purchase.

Section 4 of the Statute of Frauds 1677 (in outline).

Section 40 of the Law of Property Act, 1925. The doctrine of part performance.

Section 4 of the Sale of Goods Act 1893 and the definition of "goods" in that Act.

Capacity of parties.

Mistake ; fraud ; misrepresentation ; non-disclosure.

Conditions and warranties.

Discharge of contract. Remedies for breach of contract ; damages, specific performance ; injunction.

General principles of the law of agency.

Nature of tort ; tort distinguished from breach of contract and from crime.

General principles of liability for torts. Remedies—damages, injunction and specific restitution.

Elements of the law of Trespass, Nuisance and Negligence in relation to land.

Duties of occupiers with regard to dangerous property.

The rule in *Rylands v. Fletcher*.

Liability for fire.

Liability for animals.

Elements of Geology and Land Surveying

Geology

Rocks and their mineral constitution. Physical geology (weathering and erosion, types of earth movement, folding, faulting etc.). The principles of stratigraphical geology and the order of succession of the stratified rocks. Drift deposits.

The application of the principles of geology to the study of (i) land forms, (ii) water supply, (iii) the formation of soils, (iv) building stones, (v) the relevant aspects of public health and road engineering and of rural land utilisation.

Candidates will be expected to use and interpret simple geological and land utilisation maps.

Land Surveying

Chain surveying, levelling, contouring. Plane-table surveying. Tacheometry and allied methods. Traversing ; plotting by protractor ; traverse sheets ; plotting by co-ordinates ; adjustment of closing error.

The level, theodolite, and other surveying instruments in general use, their adjustment and maintenance. Optical laws as applied to surveying.

Setting out circular and vertical curves, roads, drains, slope stakes and boundaries.

Office practice. Preparation of plans and sections of land. Gradients and volumes determined from contour lines and sections. Ordnance Survey maps.

Practical Examination

The scope of the practical examination to be as follows :—

Field work to include : chain surveying ; surveying with theodolite, plain-table, compass, level, clinometer and tacheometer ; testing instruments ; setting out angles, straight lines, circular curves, slope stakes and contours.

The practical examination to include an inspection by the examiners of original field and level book containing records, properly certified, of actual field surveys carried out by the candidate.

Note.—Paper 1 will deal with Land Surveying and Paper 2 with Geology and Land Surveying. The Practical Examination will be in Land Surveying.

Building Materials and Construction

(Examination of Course Work only)

An elementary knowledge of the properties and uses of the principal building materials.

Scale drawings of constructional work and drainage to be found within the range of simple domestic building construction.

Schedule of Course Work

Foundations ; Brick-work—bonding, walling, arches, fire-places, chimneys ; Masonry—as for brick-work ; Carpentry and Joinery—floors, roof construction, windows, doors and other finishings ; Roofing materials—slates, tiles, lead, copper, asbestos, asphalt, etc., External and Internal Plumbing—rain water guttering, flashing, cold water supplies ; sanitary fittings, simple hot water supplies ; Drainage.

(About 12 Half-Imperial sheets of various constructional details within the above schedule, to an appropriate scale, would be considered adequate.)

B.Sc. (ESTATE MANAGEMENT) EXAMINATION**(For examinations in and after 1954)****QUALIFICATIONS FOR ADMISSION**

To be admitted to the Final Examination each candidate must (a) have been registered as an External Student preparing for the Degree of B.Sc.(Est. Man.) not less than three academic years earlier ; (b) have completed the First Examination in Estate Management at least two academic years earlier, except that a candidate who has been referred at the First Examination in Estate Management must have completed that examination at least one academic year earlier ; and (c) have obtained approval of candidature for the B.Sc.(Est. Man.) Examination as an External Student.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the second Monday in June.

APPROVAL OF CANDIDATURE

Candidates should apply for approval of candidature for the B.Sc. (Est. Man.) Examination during the period October-November of the year next but one preceding the examination, and not later than 7 December. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 7 December, application may be accepted after this date on payment of a late fee of £1 1s. which is not returnable, but no application will be accepted after 1 January in the year of the examination.

ENTRY TO EXAMINATION

The candidate list will be opened on 21 December. Entry must be made on the appropriate form which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. Entry forms will not be despatched by post from the University after 25 January, and the candidate list will be closed on 1 February. No entry can be accepted after the candidate list has been closed.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES**1. Fees are as follows :—**

	£	s.
Whole examination	6	6
Supplementary subject	2	2

2. All cheques should be made payable to the University of London or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 May, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. ix.)

SCHEME OF EXAMINATION

1. Candidates must offer either the Urban Group or the Rural Group of subjects, and will be examined as follows :—

	<i>Urban Group</i>	<i>Rural Group</i>
Principles of Economics	1 paper	1 paper
Applied Economics	1 paper	1 paper
Valuation and Taxation of Land and Buildings	2 papers	1 paper
English Law relating to Land ..	2 papers	2 papers
Local Government Law	1 paper	—
Agricultural Law	—	1 paper
The Construction and Equipment of Buildings	2 papers	1 paper
Town and Country Planning and Public Health and Estate Engineering	2 papers	1 paper
Agriculture	—	2 papers
Forestry	—	1 paper

2. The marks obtained in the First Examination shall be combined with those in the Final Examination for the purpose of the classification in divisions.

3. The examination shall be conducted in the main by means of printed papers, and by examination of course work where prescribed ; but the examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

4. Candidates shall not be approved by the examiners unless they have shown a competent knowledge in each of the subjects and in the case of Town and Country Planning and Public Health and Estate Engineering, in both parts of the subject, and have satisfied the examiners in course work in The Construction and Equipment of Buildings and in Town and Country Planning.

5. Course Work in The Construction and Equipment of Buildings and in Town and Country Planning is an essential part of the examination and the course work submitted must be certified by the candidate's teacher or teachers, if any. Candidates who are studying privately must include with their course work a declaration that it is their own unaided work.

6. Each candidate shall be required to submit his course work for inspection on each and every occasion on which he presents himself for examination, and on each occasion only such course work as is submitted shall be considered by the examiners. Nevertheless, a candidate who fails in the examination as a whole but who has satisfied the examiners in course work shall be credited with that course work and exempted from further examination of course work at any subsequent Final Examination.

7. All answers to examination questions shall be written in English unless instructions are given to the contrary.

EXAMINATION OF COURSE WORK

1. Each candidate for the examination is required to send his course work to the External Registrar about one month prior to the commencement of the written examination.

2. Course work, other than drawings, should be submitted in loose-leaf files or bound notebooks, a separate file or notebook being used for each subject. Each loose-leaf file or notebook and each sheet of drawings must bear the name of the candidate, and the full title of the subject. Each page or sheet must be numbered and an index provided. Each separate item of course work must bear the date at which it was completed. All drawings must be kept flat.

3. Course work will be returned to the candidate immediately after the examination.

SUPPLEMENTARY SUBJECTS

Candidates who have passed the B.Sc. (Estate Management) Examination are admissible for examination in one or more supplementary subjects.

TIME TABLE

The examination will be conducted in the order shown on the time table which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 8 August the External Registrar shall publish a list of successful candidates, arranged in three divisions.

2. A copy of the Pass List will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AEGROTAT DEGREE

A candidate who has been absent through illness from part of the Final Examination for a First Degree may apply to the University for the award of an Aegrotat Degree in accordance with the following Regulations :—

(1) Candidates at the External B.Sc. (Estate Management) Examination who have completed more than half of the examination are eligible to apply for an Aegrotat Degree.

(2) Applications from, or on behalf of, candidates must be accompanied by a medical certificate and should reach the External Registrar within seven days from the last day of the Examination.

(3) An Aegrotat Degree will not be awarded unless the Examiners consider that, in the work which the candidate has submitted at such part of the Examination as he has attended, he reached a standard which, if also reached in the remainder of the Examination, would have qualified him for the award of a Degree.

(4) An Aegrotat Degree will be awarded without distinction or class.

(5) Holders of an Aegrotat Degree are not permitted to re-enter for the same examination, but may proceed to a second or higher Degree on complying with the Regulations for such Degree.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass List shall be laid before the Senate for approval in October.

2. A diploma for the Degree of B.Sc. (Estate Management) under the seal of the University shall be delivered to each successful candidate.

3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

SYLLABUSES**Principles of Economics**

(Urban and Rural Groups)

The Principles of Economics, including theories of population, production, value, distribution, money and banking, and international trade.

Applied Economics

(Urban and Rural Groups)

The paper will be divided into three parts to conform with the three sections of the syllabus. Part I will be compulsory for all candidates. Rural Group students will be required to take Part II, and Urban Group students to take Part III.

I. The organization of the long and short term capital markets and the system of interest rates. The relation between capital value and annual values of the various kinds of property. Monetary policy and its effect upon values and output. Risk and insurance.

The various forms of national taxes, their incidence and effects. The nature and incidence of local rates and other charges arising from the ownership or occupation of land and property. Charges by central and local government for services and commodities.

The objects and economic effects of public expenditure. Subsidies. Grants in aid. Various forms of public debt. Fiscal policy. The national accounts.

II. The demand for farm products with special reference to the United Kingdom.

The size of farms. Choice of products in farming. Marginal and opportunity costs. The analysis of farm costs. Agricultural labour. Economic aspects of land tenure. The finance of farming and of the distribution of farm produce.

The marketing of farm products. Functions and institutions. The organization of produce markets. Wholesale and retail market problems ; co-operative marketing. Transport in relation to agriculture.

The State in relation to agriculture. Regulation of conditions of production and marketing. International trade and monetary and commercial policy as affecting agriculture. Wage regulation.

III. Outlines of the industrial and commercial organization of Great Britain. Occupational and industrial distribution of population. The value of industrial output and its distribution.

The size of business undertakings. Problems of cost analysis and of price policy. Invention and the problems of obsolescence and depreciation. Forms of industrial combination. The financing of industry and trade. Public ownership and control of industry. The special problems of public utility undertakings.

The location and concentration of industry including agriculture and government policy in respect thereof. The theory of rent and its application to urban properties. The economic effect of the actions of governments upon urban properties. Problems of transport and distribution. Wholesale and retail trade.

Valuation and Taxation of Land and Buildings

(Urban Group)

Valuations

The nature of value. Effect on values of demand and supply and of the state of the money market. Principal factors affecting supply and demand for land and buildings.

Investment value and occupation value.

The principal types of landed property, the nature of the interests existing therein, and the outgoings thereon.

The valuer—his functions and methods.

General principles governing the percentage yield from investments.

Comparison of the value of incomes derived from land with that of incomes from other sources.

Principles governing the rates of interest required from different types and classes of landed property investments.

Calculation of rental value and net income. Nature of “virtual” or “sitting” rent.

The construction, use and application of the valuation tables, including the life tables.

Effect on values of the general principles underlying the Town and Country Planning Acts.

Application of the principles and methods enumerated above to the valuation for sale and purchase of various interests in all types of freehold and leasehold properties, other than those possessing development value.

The determination of the amount of rent or premium to be paid on the grant, extension or renewal of leases.

Valuations for special purposes, including rating, income tax, death duties, mortgage, insurance, and ascertainment of “going concern” value.

Assessment of compensation for land taken, severance and injurious affection, in connection with the exercise of statutory powers for public purposes, including the acquisition of “easements” and “wayleaves.”

Valuations under the Town and Country Planning Acts.

Assessment of compensation for improvements and goodwill as between landlord and tenant.

The effect of recent legislation and present economic conditions on the value of landed property.

The valuer as an adviser on investments and policy.

Assessment of compensation in connection with the requisitioning and use of property under Emergency Powers.

Taxation

1. *Historical background*

2. *Local Taxation and Rating*.—Authorities concerned. The nature, levying and recovery of rates. The valuation list, its preparation, revision and amendment. Rateable occupation and exemptions. The basis of assessment :—Gross Value, Net Annual Value and Rateable Value. Rateable plant. Derating. Rating of owners. Land Drainage Rates.

3. *Income Tax*.—General Principles. The Schedules, especially A and B. Schedule D in relation to the occupation of land and buildings. Personal and other allowances. Calculation of tax payable and repayment claims. Methods of collection of tax.

4. *Estate Duty*.—Property Affected. Ascertainment of principal value—appeals; aggregation; exemptions and allowances.

5. *Land Tax*.—Assessment ; deductions and allowances ; recovery ; exemption and exoneration. Voluntary and compulsory redemption.
6. *Tithe Redemption Annuities*.—General scheme for abolition. Nature of annuities, their payment, recovery, apportionment and redemption.

Valuation and Taxation of Land and Buildings (Rural Group)

Valuations

Nature of value. Principal factors affecting supply and demand for land and buildings.

Investment value and occupation value.

The principal types of landed property, the nature of the interests existing therein, and the outgoings thereon.

The valuer—his functions and methods.

General principles governing the percentage yield from investments.

Principles governing the rates of interest required from different types and classes of landed property and other investments.

Calculation of rental value and net income.

The construction, use and application of the valuation tables, including the life tables.

Effect on values of the general principles underlying the Town and Country Planning Acts.

Application of the principles and methods enumerated above to the valuation for sale and purchase of various interests in freehold and leasehold properties, other than those possessing development value. Valuations for special purposes, including rating, (except industrial properties and public utilities), income tax, death duties, mortgage and insurance. Principles of assessment of compensation for land taken, severance and injurious affection, in connection with the exercise of statutory powers for public purposes, including the acquisition of "easements" and "wayleaves."

Valuations under the Town and Country Planning Acts.

The whole to be considered with particular reference to agricultural properties.

Taxation

1. *Historical Background*.
2. *Local Taxation and Rating*.—Authorities concerned. The nature, levying and recovery of rates. The valuation list, its preparation, revision and amendment. Rateable occupation and exemptions. The basis of assessment :—Gross Value, Net Annual Value and Rateable Value. Land Drainage Rates.
3. *Income Tax*.—General Principles. The schedules, especially A and B. Schedule D in relation to the occupation of land and buildings. Personal and other allowances. Calculation of tax payable and repayment claims. Methods of collection of tax.
4. *Estate Duty*.—Property affected. Ascertainment of principal value—appeals ; aggregation ; exemptions and allowances.
5. *Land Tax*.—Assessment ; deductions and allowances ; recovery ; exemption and exoneration. Voluntary and compulsory redemption.

6. *Tithe Redemption Annuities*.—General scheme for abolition. Nature of annuities, their payment, recovery, apportionment and redemption.

English Law Relating to Land
(Urban and Rural Groups)

1. (a) *Rights and Duties of Landlord and Tenant*

Different varieties of tenancies ; distinction between tenancies and licences.

Agreements for leases ; when enforceable ; Section 40 of Law of Property Act, 1925 ; part performance.

Contents of leases ; formal parts ; execution ; counterparts. Covenants ; express and implied covenants ; covenants running with the land ; usual covenants.

Rent ; apportionment ; distress ; re-entry for non-payment of rent and other remedies.

Liability for rates, taxes and other outgoings.

Repairs ; interpretation generally of the covenant to repair ; measure of damages ; dilapidations ; waste.

Assignments ; sub-leases.

Surrender ; forfeiture ; notice to quit ; recovery of possession ; action for use and occupation (details of legal procedure are regarded as being beyond the scope of the course).

Fixtures.

The principal statutory provisions governing the relationship of landlord and tenant.

(b) *Sales and Mortgages of Land*

Contracts for the sale of land ; preliminary inquiries by purchasers ; disclosure ; the effect of fraud, innocent misrepresentation and mistake.

The obligations implied in an open contract and in a contract by correspondence.

Interpretation of particulars and conditions of sale ; typical conditions contained in contracts for sale.

Rights of contracting parties after contract and before completion.

Remedies for breach of uncompleted contracts.

Rights and liabilities of the parties after completion.

Restrictive covenants ; their nature ; conditions essential to their enforcement ; “ building scheme ” ; modification and discharge.

The nature of a mortgage transaction.

The common law form of mortgage.

The borrower's equity of redemption.

Legal and equitable mortgages.

Mortgages of freeholds and leaseholds.

Rights, powers and duties of the parties.

Remedies of mortgagee.

Sub-mortgage.

Mortgages to trustees and building societies.

2. (a) *Town and Country Planning Law*

Historical development of town and country planning legislation. The Town and Country Planning Acts—general scheme of the 1947 Act, and its effect on the legal conception of land tenure ; its central and local administration provision as to development plans ; control of development under Part 3 and other relevant sections of the Act ; payments for depreciation of land values, and the levying of development charges under the Act. Nature and effect of the principal statutory instruments made under the Acts in relation to the above matters.

General principles and effect of the New Towns Act, 1946.

(b) *Compulsory Purchase and Compensation Acts*

The right of the State to appropriate land for purposes of public utility or to delegate that power to local authorities or other bodies. The right of the Crown to acquire land in times of national emergency.

The taking of land under statutory powers ; different methods by which such powers may be conferred ; the Acquisition of Land (Authorisation Procedure) Act, 1946.

The right to compensation. Distinction between a right to compensation and a cause of action at law.

Legal principles and statutory provisions governing the right to compensation for (i) land compulsorily acquired and (ii) land injuriously affected by the exercise of statutory powers.

The principle of “betterment.” The meaning and functions of the “Special Act.” The nature, functions and provisions of the “Lands Clauses Acts” and of the Acquisition of land (Assessment of Compensation) Act, 1919. Effect of Part 5 of the Town and Country Planning Act, 1947, and of the Lands Tribunal Act, 1949.

General procedure in the exercise of compulsory powers ; the taking of part only of property ; statutory rights of entry on land ; accommodation works ; rights in respect of mines and minerals under Land compulsorily acquired.

Acquisition of land under Part 4 of the Town and Country Planning Act, 1947.

Law of Arbitration

The nature of an arbitration ; arbitration distinguished from valuation ; arbitration compared with action at law.

References by consent ; the Arbitration Act 1950.

The arbitration agreement ; the parties ; the subject-matter ; appointment of arbitrators or umpire.

Conduct of an arbitration ; powers and duties of the arbitrator ; principal rules of evidence applicable to arbitrations.

Preparation and publication of award ; method of enforcing and impeaching an award.

Costs.

General principles governing the application of the Arbitration Act 1950 to statutory arbitrations.

References under order of the High Court (i) for enquiry and report, (ii) for trial.

References by Order of the County Court.

Local Government Law

(Urban Group)

Local Authorities.—General principles of the law relating to the organization and procedure of local authorities ; general principles governing the central and administrative control of local government, general principles of the doctrine of ultra vires, of the control by the courts of local authorities and of the process of statutory interpretation.

Public Health.—Public Health Law in so far as it affects owners and occupiers of property, including sewerage and drainage (except sewage disposal and pollution of rivers) ; water supply ; privies, water-closets, cesspits, etc. ; regulation of cellar dwellings ; nuisances ; offensive trades ; regulation of streets and buildings ; pleasure grounds.

Housing.—Authorities responsible for housing conditions ; statutory provisions relating to repair, maintenance and sanitary condition of houses and to the closing or demolition of insanitary premises and the demolition of obstructive buildings ; procedure in connection with Clearance Areas and Re-Development Areas including the acquisition of land and payment of compensation to owners and occupiers affected ; general provision as to the making, form, validity and date of operation of clearance orders and compulsory purchase orders ; re-development and re-conditioning by owners ; statutory provisions for the abatement of overcrowding ; provision of housing accommodation ; financial assistance for erection of houses and improvement of housing accommodation ; powers of the courts and of the Minister in relation to Housing.

Highways and Streets.—Types of highway (including the provisions relating to public paths contained in the National Parks and Access to the Countryside Act, 1949) ; the rights of the owner of the soil, the public, public authorities and statutory undertakers ; the creation, stopping up or diversion of highways ; liability for repair and maintenance—the authorities now responsible ; remedies for non-repair ; nuisances in connection with highways ; extraordinary traffic ; right of access to highways and liability for fencing ; the laying out, making up and taking over of private streets ; restrictions on use of land adjoining a highway ; building lines ; improvement lines ; statutory powers to acquire land for construction ; widening and improvement of highways.

Areas of Comprehensive Development.—Powers and duties of local authorities in regard to the use, disposal and appropriation of land acquired for dealing with areas of comprehensive development and other purposes under the Town and Country Planning Acts.

Notes.—(i) The student should have a thorough knowledge of those aspects of the above matters which directly concern owners or occupiers of property, including making of bye-laws, orders and regulations, giving of notices, rights of objection and appeal, and holding of local inquiries. He is not expected to study details of procedure of administrative or financial provisions which are mainly the concern of local authorities or of the responsible government department.

(ii) Emphasis will be laid on the general principles of the law rather than upon the details of statutory provisions.

(iii) A detailed knowledge of case law is not required, but the student should be familiar with leading decisions on the branches of the law mentioned above.

(iv) The matters dealt with should relate primarily to areas outside London but candidates will be expected to know the main differences between the law on the subjects dealt with in London and outside London.

Agricultural Law

(Rural Group)

Administrative provisions affecting the agricultural industry ; guaranteed prices and assured markets ; financial assistance to agriculture ; administrative control of agricultural operations.

The law relating to Agricultural Holdings, including contracts of tenancy, rights and liabilities of landlord and tenant, custom of the country, game, trees, mines, minerals and quarries. The principal statutes relating to agricultural holdings.

Law relating to stock and crops, including contracts for the sale and conveyance of animals and goods, and the Law relating to dangerous animals.

Law relating to sale of seeds, fertiliser, manures and feeding stuffs.

Law relating to animal and plant diseases.

Law relating to the marketing of agricultural produce.

The general law of master and servant.

Statutory provisions relating to land improvement, land drainage, electricity wayleaves, and housing of agricultural workers.

The law relating to Small Holdings, Allotments and Allotment Gardens.

Rights of common ; enclosure.

The National Parks and Access to the Countryside Act, 1949.

Law of Highways ; types of highway ; modern highway authorities ; ownership of highway ; rights of owner of soil and of public authorities ; creation, stopping up or diversion of highways ; liability for repair and maintenance ; nuisances in connection with highways ; rights of access to and fencing of highways ; restrictions on use of land adjoining a highway ; restrictions on access to highways ; roadside wastes.

Statutory provisions and bye-laws relating to public health, sanitation and water supply, so far as they affect agricultural property.

The Construction and Equipment of Buildings

(Urban Group)

Candidates will be expected to show a general knowledge of building construction and the provision of services which would enable them to form a critical appreciation of problems met with in the practice of an Estate Manager, as applied to domestic buildings, commercial buildings and factories.

Factors in the choice of building sites, and the choice and use of materials and methods of construction.

Drainage and Sanitation.

An appreciation of the functions of the specialist services including illuminating, heating and ventilating, electricity, gas and acoustics.

The administration of building works with special reference to the alteration and maintenance of property, including the nature and use of Specifications and Bills of Quantities, Building Contracts, Notices and applications to Local Authorities, and supervision of work in progress.

Course Work :—

Foundations, walling (including openings), floors, roof and roof coverings, finishings (including joinery), drainage and sanitation, heating, hot and cold water supply, ventilation, lighting.

About 12 Imperial sheets of details within the above schedule, to an appropriate scale, together with note-books, would be considered adequate.

The Construction and Equipment of Buildings (Rural Group)

Candidates will be expected to show a general knowledge of the construction and adaptation of rural buildings which would enable them to form a critical appreciation of the problems met with in the practice of an Estate Manager, as applied to rural cottages and farm buildings.

Drainage and Sanitation.

Services including water, gas, electricity. Heating systems and natural systems of ventilation. Roads, gates and fences for rural use.

The administration of building works, with special reference to alteration and maintenance of property, including the nature and use of Specifications and Bills of Quantities, Building Contracts, Notices and applications to Local Authorities, and supervision of work in progress.

Course Work :—

The layout of farmsteads of different sizes and purposes, and their effect on labour efficiency. The various farm and rural buildings including their construction and equipment, drainage and sanitation, water supply, heating, ventilation, lighting and power, also the adaptation of existing farm buildings.

About 12 Imperial sheets of drawings within the above schedule to an appropriate scale, together with note-books, would be considered adequate.

Town and Country Planning and Public Health and Estate Engineering (Urban Group)

Town and Country Planning

Historical Development of Town and Country Planning.—The history of civic development in classical and mediaeval times. The Renaissance and its effects on town development in Western Europe. The planning of urban and rural estates by great landlords in Britain. The evolution of the industrial town. Bye-law planning in the late nineteenth century. The garden city and New Towns movements. The objectives of Town and Country Planning to-day. The character and design of the landscape.

Principles of Town and Country Planning.—Geographical, social, economic and aesthetic considerations in Town and Country Planning. The component parts of the plan : choice of site for civic, commercial, residential, educational and recreational uses ; the extent, grouping, and spacing of such uses. Principles of zoning and reservation of land : use-zoning and density-zoning. Communications and their relation to zoning. Concept of the residential neighbourhood. The distribution of industry and the Development Areas.

Development Plans.—Town and Country Planning techniques. Objects, preparation and presentation of surveys of planning areas. Preparation and scope of development plans for (a) New Towns ; (b) Existing Towns ; (c) Redevelopment Areas.

Site planning for residential areas : principles of traffic circulation, building lines, sizes and shapes of plot, appropriate grouping of buildings, treatment of corner sites, landscape treatment, tree-planting, grass verges, securing and preservation of amenity, economy in layout.

Procedure.—Procedure under existing Town and Country Planning law ; maps and documents comprising Development Plans. Control of development : applications for planning permission ; planning by leasehold control.

Objections, appeals and public inquiries.

Course Work :—

On application to the External Registrar candidates will be supplied with a key plan of the main communications structure of the central area of an English town with a population of 150,000. It may be assumed that this central area was completely destroyed by bombing in the late war and that the roads and railway lines alone are now in use.

Candidates are required to prepare, to a scale of 25 inches to the mile, a master plan showing their proposals for the redevelopment of this central area. The master plan should be accompanied by a written statement explaining the proposals shown. Candidates may make any reasonable assumptions that they think fit, regarding the type of town and its environment, provided that these are made clear in the written statement and where necessary the reasons for them given.

The notation to be used in the master plan is that described in Circular No. 92 ("Reproduction of Survey and Development Plan Maps"), issued by the Ministry of Town and Country Planning (H.M.S.O. 1951).

Public Health and Estate Engineering

Water Supply.—Community water supply system ; water consumption ; collection and storage of surface water, development and utilization of ground waters ; wells, water distribution systems and their public health hazards.

Sources of water supply ; rainfall and run-off ; estimate for storage ; water quality, impurities, hardness.

Sewerage.—Foul and surface water drainage ; land drainage ; sub-soil drainage ; drainage areas ; design of sewerage systems.

Volume of sewage ; discharge of sewers ; gradients ; factors affecting sewerage planning.

Sewage Disposal.—Community sewage collecting and disposal systems ; sewage characteristics ; stream pollution and self-purification ; trade effluents ; planning for pollution abatement ; treatment of polluted waters ; choice of site for sewage works.

Sewage and waste treatment ; sea disposal ; land treatment ; activated sludge ; sludge disposal ; manurial value of sludge.

Roads and Road Construction.—Surface utilization surveys ; traffic surveys ; smoke abatement ; classification of roads ; road users ; location of new roads ; soil surveys.

Junctions and roundabouts ; road layouts ; aesthetics, widths, gradients, visibility ; tree planting ; parking problems ; road curves ; road amenity in relation to the landscape.

Construction of roads ; road foundations and surfacings ; drainage of roads ; concrete road construction.

Road making materials.

Piped and Cabled Services.—Planning requirements ; life of mains ; location of mains ; subways for services ; problems of standardization of layout and practice.

Town and Country Planning and Public Health and Estate Engineering

(Rural Group)

Town and Country Planning

Outline history of the development of towns and countryside in Britain from Roman times until the present. The evolution of the

British countryside. The Agrarian Revolution and the Industrial Revolution and their effects on the countryside. The garden cities and the New Towns movements. The objectives of Town and Country Planning to-day.

Purposes of rural and regional surveys. Spheres of influence of villages and towns. Effect of industry and employment generally on the location of housing and the provision of transport and other services in rural areas. Development Plans for villages and country towns.

Procedure under existing Town and Country Planning law ; form and content of Development Plans. Control of development : applications for planning permission. Planning by leasehold control. Objections, appeals and public inquiries.

Public Health and Estate Engineering

Water carriage sewage disposal systems ; disposal of solids fraction ; disposal of liquids fraction ; cesspools ; non-water carriage excreta disposal.

Rural water supply ; sources ; water consumption ; surface and ground waters ; types of systems ; relation of water supply to disposal of sewage ; land drainage ; discharge of sewers.

Location of new roads ; junctions and roundabouts ; road layouts ; aesthetics, widths, gradients, visibility ; road curves ; road amenity in relation to the landscape ; construction of roads ; road foundations and surfacings ; drainage of roads ; concrete road construction ; road-making materials ; piped and cabled services.

Course Work :—

On application to the External Registrar candidates will be supplied with a key plan of a small rural area in England which at present lacks a focal point for its life and activity.

Candidates are required to prepare, to a scale of 50 inches to the mile, a master plan for a new village for a population of 350 that it is proposed should be built to meet the needs of the area. The location of the village within the area is at the discretion of the candidate. The master plan should be accompanied by a written statement explaining the proposals shown. Candidates may make any reasonable assumptions that they think fit regarding the nature of the area and other matters, provided that these are made clear in the written statement, and where necessary the reasons for them given.

The notation to be used in the master plan is that described in Circular No. 92 ("Reproduction of Survey and Development Plan Maps") issued by the Ministry of Town and Country Planning. (H.M.S.O. 1951).

Agriculture (Rural Group)

Factors affecting land use in Britain. The structure of British farming and the interdependence of farming systems.

Chemical, physical and biological attributes of soils affecting plant growth. Soil fertility and its maintenance. Fertilizers and their reactions with the soil complex. Manurial practice. The control of soil moisture and problems of drainage. Soil erosion and its control. Land reclamation. The interpretation of soil surveys and the assessment of soils for agricultural purposes.

Growth and development of crop plants and the influence of environmental factors on these processes. Plant competition ; plant associations and successions. Plant improvement. The principal agricultural crops, their distribution and optimum environments ; their cultivation,

harvesting, storage and use. Mechanization of crop production and the selection of machinery and equipment. Crop protection and weed control. Grassland management and the utilisation of herbage. Conservation of herbage crops.

Elementary anatomy and physiology of farm animals with special reference to reproduction, milk secretion, growth and development. The elements of nutrition. Feeding Standards and their application. The principal feeding stuffs and their characteristics. Manurial residues.

Farm animals and the organisation of animal production. The maintenance and management of herds and flocks. Animal improvement—objectives, methods of selection and breeding systems. Animal products and their quality standards. The elements of animal health and disease control.

The farm as a unit ; capital requirements, farm selection and appraisal ; farm layout in relation to systems of farming and economy of working ; buildings and equipment. Planning of farming operations including development of rotations, maintenance of soil fertility, utilization of labour and equipment, cropping programmes and provision of food for livestock. The use of farm records and accounts. Analysis of farming efficiency. Marketing of agricultural produce.

Forestry (Rural Group)

The life history of a tree : formation and structure of wood, softwood and hardwood types. Elements of tree classification. The trees commonly grown for timber, shelter and ornament, the more common shrubs for hedges and game coverts. Identification of common timber trees by twigs, leaves, flowers, fruit, seed and timbers. The influence of climate and soil on tree growth. Types of British woodlands and their distribution.

Silvicultural characters of timber trees. Choice of species. Propagation by seed, cuttings and layering. Collection of seed and preparation for sowing. Formation and management of forest nurseries ; production of seedlings and transplants. Formation and management of plantations ; draining, fencing, preparation of ground, planting and treatment of the young crop, thinning. Restocking by natural regeneration. Underplanting. The principal forest systems. Coppice management. Silviculture and sporting.

Protection of woodlands against climatic factors, fire, human agencies, destructive mammals, insects and fungi.

Measurement and valuation of trees, standing and felled. Computation of contents and increment of woods. British yield tables. The chief properties and uses of the common British timbers. Felling, extraction and transport of timber ; felling licences, seasoning and preservation of timber on private estates. Utilisation of timber for estate purposes. Preparation for marketing on the sale of pitprops and other minor forest products. The sale of timber on a private estate.

Amenity woods, park and roadside trees ; their treatment and preservation. Formation and treatment of hedges. Tree preservation orders.

National importance of forestry. State policy. The Forestry Commission its work and organisation, its relations with the private owner, the Dedication Scheme, financial assistance, private estate forestry compared with that of the State. Forestry considered with regard to the management of the estate as a whole ; organisation and equipment of an estate woodlands department ; plans of operation and simple working plans.

MASTER OF SCIENCE (ESTATE MANAGEMENT)

REGULATIONS FOR THE REGISTRATION OF EXTERNAL STUDENTS FOR HIGHER DEGREES

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma or postgraduate certificate will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry to the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee, provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and withdraws, fails, or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required to cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted; A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed in the Regulations, obtain the necessary entry papers, and return them to the University with the examination fee.

FEES						£	s.
Registration Fee	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	2	2

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the examination each candidate must (a) have obtained the B.Sc. (Est. Man.) Degree in this University not less than two academic years previously (in exceptional cases this interval may be reduced); and (b) have been registered as an External Student for the M.Sc. (Est. Man.) Examination at least twelve calendar months before the last date of entry.

2. Candidates who have obtained the M.Sc. (Est. Man.) Degree in one subject may enter again in another subject on complying with the regulations in all other respects.

DATE OF EXAMINATION

The examination shall take place once in each year, and shall commence on the fourth Monday in May, provided that if the fourth Monday in May be Whit Monday the examination will commence on the following Tuesday.

ENTRY TO EXAMINATION

The candidate list closes on 1 February. Any External Student duly registered for this examination may make his entry at any time during the preceding six weeks. Every candidate, when making his entry, must send the original copy of the approved syllabuses. Three copies of the dissertation (two of which must be bound in accordance with the regulations obtainable from the External Registrar) must reach the University not later than 1 March.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Every candidate must pay a fee of £15 15s. A candidate who is permitted to re-enter with exemption from dissertation or written papers shall be charged half the ordinary M.Sc. (Est. Man.) fee for re-entry.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from the examination after the last date of entry but not later than 15 April, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations p. x.)

SCHEME OF EXAMINATION

1. Not less than one year before he desires to enter for the examination the candidate shall submit for the approval of the Council for External Students the title of the General and Special subjects in which he proposes to present himself. Applications must be submitted in duplicate on the prescribed form and must include clearly stated syllabuses of the subjects.

2. The general subject chosen should fall broadly within one of the following fields, and the special subject should deal with some part or aspect of the general subject. Other subjects may be submitted for approval.

Valuation of Land and Buildings, Urban.

Valuation of Land and Buildings, Rural.

Town Planning.

Country Planning.

Estate Development and Management, Urban and Rural.

3. The Council's approval of title and the approved syllabuses of the subjects, whether in their original or in an amended form, will be communicated to the candidate in writing, and on these the examination will be based. These syllabuses of the subjects must be returned to the University when the candidate makes his entry.

4. The examination shall consist of two written papers on the candidate's general subject, and, in addition, a dissertation written in English on the candidate's special subject. In addition candidates may, at the discretion of the examiners, be required to present themselves for an oral examination.

5. All answers to examination questions shall be written in English unless instructions are given to the contrary.

6. If the examiners consider that a candidate's dissertation is adequate, but that he has not reached the required standard in the written portion of the examination, they may, if they think fit, recommend that he be exempted on re-entry from presentation of a dissertation. Similarly, if the examiners consider that the candidate has reached the required standard in the written portion of the examination, but that his dissertation is not adequate, they may, if they think fit, recommend that he be exempted on re-entry from the written portion of the examination. In either of the above cases the examiners may, if they so desire, examine the candidate again orally when he re-enters for the examination.

TIME TABLE

The order of the examination will be sent to candidates as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. A list of candidates for the Degree of M.Sc. (Est. Man.) who pass to the satisfaction of the examiners shall be published at the University.
2. A copy of the Pass List will be sent to each successful candidate. An individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the pass lists shall be laid before the Senate for approval in July.
2. A diploma for the Degree M.Sc. (Est. Man.) under the seal of the University shall be delivered to each successful candidate.
3. A notification of the date of the Presentation Ceremony, which takes place in May of each year, will be sent to each successful candidate. Invitations for presentation to the Chancellor on Presentation Day are limited to those who were awarded a degree during the preceding year.

DISSERTATIONS

Copies of all successful dissertations together with any subsidiary contributions submitted will be deposited for reference in the University library. Any copies of the dissertation which are not required by the University after the examination has been completed will be returned to the candidate.

RESEARCH FUND

The Senate has at its disposal a Research Fund from which grants may be made to individuals for the provision of materials and apparatus for specific projects of research. Any External graduate or student for an External Higher Degree who desires to be considered as an applicant for a grant should in the first place communicate with the External Registrar.

DOCTOR OF PHILOSOPHY AND DOCTOR OF SCIENCE (ECONOMICS)

Regulations for Doctor of Philosophy or Doctor of Science (Economics) may be obtained on application to the External Registrar.

SCHOLARSHIPS

THE CHARTERED AUCTIONEERS' AND ESTATE AGENTS' INSTITUTE SCHOLARSHIPS IN ESTATE MANAGEMENT

Two Scholarships of the value of £50 each are awarded annually by the Chartered Auctioneers' and Estate Agents' Institute to men and women who desire to study for the B.Sc. (Estate Management) Degree.

Competition for these Scholarships is open to any Member of the Institute who has satisfied the minimum entrance requirements of the University of London and who intends to study for the Degree and to follow the profession of an Estate Agent, provided that before the Scholarship is actually awarded to him he satisfy the Council of the Institute that he is actually articulated to a Member of the Institute or is or undertakes to become engaged in the work of an Auctioneer or Estate Agent under such conditions as the Council of the Institute may approve; and that he intends *bona fide* to follow such work as a profession.

The Scholarships are awarded upon the results of a Special Examination held annually in January. Candidates must complete and lodge a Form of Entry with the Secretary of the Institute not later than 1 December, and furnish such information as the Council of the Institute may require. The Examination will be held in London only and will occupy one day.

The Scholarships are awarded in the first instance for one year only ; but the Council of the Institute may, if they are satisfied with the work, progress and conduct of the holders, extend their tenure for a second year and for a third year.

It will be necessary for Candidates for the Scholarships to produce evidence that they have satisfied the minimum entrance requirements of the University of London.

THE CHARTERED AUCTIONEERS' AND ESTATE AGENTS' INSTITUTE MEDAL

A silver gilt medal accompanied by a prize of books or instruments to the value of £5 5s. 0d. will be awarded annually by the Chartered Auctioneers' and Estate Agents' Institute to the candidate who, having passed in both parts of the Final Examination on one and the same occasion, obtains the highest number of marks in the final examination for the B.Sc. (Estate Management) Degree, provided the candidate obtains not less than a prescribed percentage of the maximum marks.

In order to be eligible for the Medal, the candidate must take both parts of the Final Examination in one year.

Note.—In 1954 and 1955 the award of the medal will be withheld.

THE INCORPORATED SOCIETY OF AUCTIONEERS' AND LANDED PROPERTY AGENTS' SCHOLARSHIPS

By way of Scholarship the Council of the Society offers a free training course at the College of Estate Management, and University fees, together not exceeding £50, to one student preparing to take the B.Sc. (Estate Management) Degree. Candidates for the Scholarship must be engaged in the work of an Auctioneer and/or Estate Agent and/or Surveyor in circumstances approved by the Council and shall have satisfied the minimum entrance requirements of the University of London.

UNIVERSITY OF LONDON



REGULATIONS FOR THE DIPLOMA IN PUBLIC ADMINISTRATION for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

Special Regulations are published for examinations held overseas. Candidates sitting at overseas centres must comply with these special Regulations which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTE

Candidates for the Diploma in Public Administration as External Students are required to satisfy the minimum University entrance requirements, to have been registered as External Students preparing for the Diploma in Public Administration, and to pass both parts of the Diploma Examination normally taking not less than two calendar years.

DIPLOMA IN PUBLIC ADMINISTRATION

QUALIFICATIONS FOR ADMISSION

1. To be admitted to the examination each candidate must (*a*) have satisfied the minimum University entrance requirements and been registered as an External Student preparing for the Diploma in Public Administration ; (*b*) *either* hold a degree of an approved University *or* hold an approved technical or professional qualification awarded by an approved body ; (*c*) have been employed by a public authority in administrative work of an approved standard for at least three years ; and (*d*) have obtained approval of candidature for the Diploma in Public Administration Examination, Parts I and II.

2. A candidate who has passed Part I must complete Part II not more than four years from the date of completion of Part I and a candidate who has failed in either part of the examination and who re-enters and again fails, will not be allowed to enter again except by special permission and after consideration of the report of the examiners.

DATE OF EXAMINATION

The examination shall take place once in each year, beginning on the fourth Monday in June.

APPROVAL OF CANDIDATURE

Candidates for the whole examination should normally apply for approval of candidature during the period September-October of the year next but one preceding the year in which the examination will be held and not later than 25 October. Candidates for either part of the examination should normally apply for approval of candidature during the period September-October of the year preceding that in which the examination will be held, and not later than 25 October. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by 25 October, whether for the whole of the examination or one part, application may be accepted after this date on payment of a late fee of £1 is., which is not returnable, but no application will be accepted after 8 April in the year of the examination.

ENTRY TO EXAMINATION

The candidate list for the examination will be opened on 27 March. Entry forms will not be despatched by post from the University after 1 May, and the candidate list will be closed on 8 May.

Candidates are advised to make application for entry forms and to send in the completed entry as early as possible. No entry can be accepted after the candidate list has been closed.

Every candidate when making entry for the Optional Subject in connection with which he proposes to submit an essay, must forward two double-spaced typewritten copies of his essay for examination.

Notice of intention to be examined at a Provincial Centre must be given at the time of entry.

Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.	d.
Whole examination	7	7	0
One part only	3	13	6
Referred subject	2	2	0
Additional optional subject	2	2	0

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank, Ltd., Tavistock Square, W.C.1, University of London Account".

3. A candidate who withdraws from the examination after the last date of entry but not later than 1 June may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations, p. ix).

SCHEME OF EXAMINATION

1. The examination will consist of six subjects, four compulsory subjects and two optional subjects, as follows :—

Compulsory Subjects :—

1. Public Administration, Central and Local.
2. Statistics.
3. English Economic and Social History since 1815.
4. Social and Political Theory.

Optional Subjects ; two of the following to be selected by the candidate :—

5. English Constitutional Law.
6. The History and Principles of Central Government since 1832.
7. The History and Principles of Local Government since 1834.
8. The Evolution and Administration of Nationalized Industries.
9. Economics, with special reference to Public Finance.

2. The examination shall consist of one three-hour paper in each subject. In addition, each candidate will be required to submit, when making entry, an essay of approximately 5,000 to 10,000 words on an approved theme connected with one of his two Optional Subjects.

3. Every candidate when making entry for the Optional Subject in connection with which he proposes to submit an essay, must forward two double-spaced typewritten copies of his essay for examination.

4. On or before 8 January of the year in which he proposes to take the Optional Subject in connection with which he proposes to submit an essay, the candidate must submit for approval the title of his proposed essay, together with a brief syllabus. A candidate whose essay satisfies the examiners will not be required to re-submit his essay, whatever his performance in the written part of the examination, but a candidate who fails in the essay will fail in the relevant subject as a whole.

5. The examination shall be divided into two Parts, and candidates may either present themselves for examination in Part I, consisting of any three subjects, after not less than one year's study, or for the whole examination on one and the same occasion after not less than two years' study. A candidate who has passed Part I must pass Part II within not more than four years from the date of completing Part I.

6. A candidate who fails in either Part of the examination, and who re-enters and again fails, will not be allowed to enter again except by special permission and after consideration of the report of the examiners. A candidate who is not given permission for such re-entry, or who after such re-entry fails, will not be permitted to complete the examination on a subsequent occasion.

7. Candidates will not be approved unless they have shown a competent knowledge in each of the six subjects and have satisfied the examiners in the essay ; but a candidate who enters for both Parts of the examination at the same time and satisfies the examiners in three or four subjects only may, on the recommendation of the examiners, be credited with three of these subjects as Part I of the examination. This concession may also be granted to candidates who satisfy the examiners in five subjects but who are not recommended, under para. 8 for reference.

8. A candidate who enters for both Parts of the examination at the same time and who fails to satisfy the examiners in one subject only may, on the recommendation of the examiners, be referred, i.e., he may be permitted to re-present himself for examination in that subject alone, within not more than four years. A candidate who on re-entry again fails in his referred subject may, on the recommendation of the examiners, be referred on one further occasion only ; a candidate who is not given permission for such re-entry, or who after such re-entry fails, will not be permitted to complete the examination by taking his referred subject on a subsequent occasion.

The examiners will recommend that a candidate be referred only if his failure in one subject is not serious and if his performance in the remaining subjects is reasonably good.

A candidate who has completed the examination after having been referred in one subject will be deemed for all purposes to have passed the examination on the date of completion ; a candidate who has been referred must complete the examination within not more than four years from the date at which he was credited with the remaining subjects.

9. The examiners shall be at liberty to test any candidate by means of oral questions ; but, for overseas students, the examiners may, after considering a candidate's written work, set a further written paper or papers.

10. All answers to examination questions shall be written in English unless instructions are given to the contrary.

11. No exemption is granted from any subject of this examination.

SUPPLEMENTARY SUBJECTS

Candidates who have obtained the Diploma may enter for examination in an additional optional subject or subjects in which they have not previously satisfied the examiners, and may have such subject or subjects endorsed on their Diploma.

TIME TABLE

The examination will be conducted in the order shown on the time table which will be supplied to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

1. On 5 August the External Registrar will publish a list of successful candidates arranged in alphabetical order.

2. A copy of the Pass List will be sent to each successful candidate and an individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the examiners and the Pass Lists shall be laid before the Senate in October.
2. A Diploma under the seal of the University shall be delivered to each successful candidate.

SYLLABUSES

(1) Public Administration, Central and Local

The general principles of the Parliamentary system. The administrative process in relation to democratic government. The principles involved in the structure, organization, functions and methods of all types of public authority engaged in administration, whether national, regional or local, and whether executive or advisory. These include not only the central departments and local authorities but also the non-departmental organizations, public boards and corporations.

The general functions of administrative authorities, including executive, legislative and judicial functions. The various methods appropriate to different types of functions.

The various forms of control over administration. External control by Parliament and the Cabinet ; Treasury control ; central control of local government ; ministerial control of public corporations, etc. ; judicial control by the courts and administrative tribunals. Internal control of the administrative machine (integration, co-ordination, decentralization) ; financial control ; "common service" departments as a medium of control ; control by a local council of its committees.

Personnel problems (e.g., recruitment, grading, promotion, retirement, training) relating to the civil service, local government service and analogous staffs. The place of the specialist in administration.

Problems relating to planning, research, information and public relations services and the exercise of administrative discretion.

(2) Statistics

Collection, definition and tabulation of data. Approximations and error. Frequency groups, time series and graphical representation. Measures of average and dispersion. Index numbers. The elements of the analysis of time series. The simplest ideas of sampling and correlation.

The main sources of statistics of population, manpower, industrial health, production, consumption, prices, trade, national income and capital. The nature and limitations of these statistics and the application of elementary statistical methods to them. Index numbers in practice.

Either :—More advanced statistical method, including elementary mathematical treatment of the following subjects :—Frequency distributions, moments and cumulants. Elementary theory of correlation. Binomial, Normal and Poisson distributions. The elements of the theory of sampling.

Or :—Further sources of economic, social and administrative statistics, particularly statistics published by central and local government authorities, public corporations, nationalized industries and trade associations. The use of statistics in the treatment of social problems and the elements of the technique of social surveys.

[*Note*.—Logarithm tables will be provided by the University and slide rules may be brought to the examination in this subject.]

(3) English Economic and Social History since 1815

The growth of population ; changes in the geographical and occupational distribution of the people. The development of agriculture, manufacture, transport, trade and banking. The sources of industrial capital ; the growth of factory production ; the economic and social effects of the railways ; industrial concentration and combination.

Urbanization ; the health of towns. Poverty and the Poor Laws. The development and changing structure of trade unions ; the evolution of wage systems.

The movements of prices ; the major fluctuations of activity and employment ; changes in the distribution of income and property.

The chief currents of economic thought. Individualism ; the removal of restrictions on industry and commerce ; the Free Trade movement. Collectivism ; the expansion of the functions of central and local government ; the growth of the professions and of the civil service ; industrial and social legislation ; the extension of public enterprise.

(4) Social and Political Theory

The place of the individual citizen in the modern community. The basis of political and social obligation. The criteria of values. Forces which shape these criteria. The theory of rights. Philosophies of freedom and constitutional government. Criticism of constitutional government, and of democracy and freedom. Limitations upon individual right and governmental right. Nations and nationalism. Emergence of political communities with authority reaching beyond the claims of the nation-state. Political power and ethical obligation. Political power and economic organization. The ethical and related problems arising from the contact of advanced and primitive societies. The concepts of civilization and progress. The sociological approach to political and social philosophy. Philosophic analysis of the structure of a modern community. Significance of history in political and social philosophy.

(5) English Constitutional Law

The nature of constitutional law. Sources and characteristics of British constitutional law. The separation of powers. Parliamentary sovereignty. The royal prerogative, including the treaty-making power. Constitutional conventions.

Parliament, its position, functions and powers. Parliamentary privilege and procedure. Control of national finance.

The Privy Council and the Cabinet. Committees of the Cabinet. Ministerial responsibility. The position of the prime minister. The principal government departments. The civil service.

The position of the judges. Proceedings by and against the Crown, Crown servants and public authorities. Judicial control of public administration. Prerogative writs and orders.

Administrative tribunals and delegated legislation. The rule of law. Outline of the structure of local government. Central control of local authorities ; the finance of local authorities.

The citizen and the State. The rights of personal liberty, free speech, and public meeting. Police search. The Public Order Act.

Allegiance, nationality and citizenship.

The British Empire and the British Commonwealth of Nations. The distinctions between Dominions, colonies, protectorates, and trust territories. Dominion status. The position of the Crown in the Commonwealth. Appeals to the Judicial Committee of the Privy Council.

(6) The History and Principles of Central Government since 1832

The development of the franchise and the growth of party organization in the country and in Parliament. The development of Cabinet government and changes in Cabinet organization. Parliamentary procedure and the relations between the House of Commons and the House of Lords. The growth of the administrative machinery of the State including : the reform of old and the creation of new government departments ; the Treasury ; the reform and development of the Civil Service ; delegated legislation and administrative law ; the main changes in the structure of local government and the nature of central and local relations. The reorganization of the judicial system. Dominion status and the constitutional problem of Ireland. The prerogatives of the Crown, the rights and liberties of the people, the relation between law, convention and opinion.

(7) The History and Principles of Local Government since 1834

The relation between political ideas and local government. The evolution of local government during the 19th and 20th centuries. Local government as an expression of democracy. Parliamentary control.

The problem of areas and authorities. *Ad hoc* and multi-purpose organs. The Committee system. Relations between councillors and officials. Methods of co-ordination and control. Relation between major and minor local authorities.

The main functions of local authorities and the principles underlying their distribution. Methods of conferring and delegating powers. The organic relation between structure and function.

The relations between Central Departments and Local Authorities. The instruments of control and influence. Grants-in-aid.

Judicial control of local authorities.

The local government service. Its characteristics and problems.

The impact of present day economic, technical and social forces on local government. The special problem of conurbations and metropolitan centres. Schemes of reform in function and areas. The English system compared with those of France, the United States and Germany.

(8) The Evolution and Administration of Nationalized Industries

The development of public utilities during the 19th and 20th centuries. The role in this sphere of Parliament, Government Departments, regulatory Commissions, the judiciary, local authorities, *ad hoc* bodies and public boards.

The use of a Ministerial Department for the conduct of a nationalized service or a public utility. The rise of the public corporation in the 20th century. Its special characteristics and the reasons for its emergence. The constitutional, political, legal, administrative and economic aspects of the corporations responsible for such industries and services as coal, broadcasting, forestry, transport, civil aviation, electricity, gas, the Bank of England, new towns, raw cotton, colonial development, overseas food resources, etc.

The appointment and status of the Board. Ministerial control. Parliamentary supervision. Relations with consumers and employees. Finance and audit. Compensation and capitalization. Advisory Councils and administrative tribunals.

The problems of personnel, co-ordination, organization, measurement of results, competition, the size of the operating unit, price policy, incentive, etc.

(9) Economics, with special reference to Public Finance

The principles of economics, including theories of population, production, value, distribution, money and banking and international trade, and their applications to practical problems of contemporary interest, and in particular to the problems of public finance and the relationship between budgetary policy and public economic policy at large.

UNIVERSITY OF LONDON



REGULATIONS FOR THE DIPLOMA IN SOCIAL STUDIES for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a "Blue Slip" which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

EXTERNAL DIPLOMA IN SOCIAL STUDIES

The University grants a Diploma in Social Studies to External Students who have successfully completed Parts I and II of the Diploma Examination. The number of students permitted to register for this Diploma in each six months period between 1 January and 30 June, and 1 July and 31 December is strictly limited.

The following Regulations apply to all External Students except those attending a course of study at the University College of Exeter or Hull or Leicester for whom special Regulations exist. Such students should apply to the Registrar of the College for details of Regulations and Courses.

QUALIFICATIONS FOR ADMISSION

1. To be admitted to Part I each candidate must (*a*) have satisfied the minimum University entrance requirements and have been registered as an External Student preparing for the Diploma in Social Studies not less than two years earlier ; (*b*) have reached the age of twenty years ; and (*c*) have obtained approval of candidature for Parts I and II of the Diploma in Social Studies.

2. To be admitted to Part II each candidate must (*a*) have passed or been referred at Part I ; and (*b*) have completed in a student capacity a period of not less than six months in practical work arranged or approved by the University.

DATE OF EXAMINATION

The examination for Part I of the Diploma shall take place twice in each year beginning on the first Thursday after 3 June and on the third Monday in January. The examination for Part II shall take place twice in each year in the weeks commencing on the third Monday after 28 June and the fourth Monday in February.

APPROVAL OF CANDIDATURE

1. (*a*) Part I (January) and Part II (February).

Candidates should apply for approval of candidature during the period January-June in the year next but one preceding the examination and not later than 10 July in that year.

(*b*) Part I (June) and Part II (July).

Candidates should apply for approval of candidature during the period September-December in the year next but one preceding the examination and not later than 10 January in the year preceding the examination.

2. Provided that the Council for External Students are satisfied about the reasons for failure to apply for approval of candidature by the required date, application may be accepted subsequently on payment of a late fee of £1 1s which is not returnable. No application will, however, be accepted after 26 October in the year preceding the examination for Part I (January) and Part II (February), or after 4 March in the year of the examination for Part I (June) and Part II (July).

3. In order to be approved, a candidate must have satisfied the University at an interview before a Board in London that he is a suitable person. The Board will take into consideration references from responsible persons or bodies nominated by the candidate to give information about his previous education and experience. Interviews are held twice yearly in May and in November. Candidates should apply for interview on the appropriate forms which can be obtained from the External Registrar. Application for interview in May should normally be made before 15 April, and for interview in November before 15 October.

ENTRY TO EXAMINATION

1. For the examinations to be held in June–July, the candidate list for Part I will be opened on 18 February and for Part II on 27 March. Entry forms will not be despatched by post from the University after 25 March for Part I or 1 May for Part II. The candidate list for Part I will be closed on 1 April and for Part II on 8 May.

2. For the examinations to be held in January–February, the candidate list for Part I will be opened on 15 October, and for Part II on 28 November. Entry forms will not be despatched by post from the University after 19 November for Part I, or 2 January for Part II. The candidate list for Part I will be closed on 26 November, and for Part II on 9 January.

3. Entry must be made on the appropriate forms which may be obtained on application to the External Registrar. Candidates are advised to make application for entry papers and to send in the completed entry as early as possible. No entry can be accepted after the candidate list has been closed.

4. Every candidate, when making his entry to Part II, must forward two typed copies of his report on practical work. The Tutor's confidential report on the candidate must be sent in duplicate to the University in accordance with instructions on the entry form.

5. Entry forms for Part II must be endorsed by the Tutor as evidence of the satisfactory completion of the practical work prescribed.

6. Notice of intention to be examined for Part I at a provincial centre must be given at the time of entry.

7. Any candidate who has duly applied for entry papers and does not receive them within three days after the last date for obtaining them, should immediately communicate full details by registered post to the External Registrar by name, L. E. Ball, O.B.E., B.Sc.

EXAMINATION FEES

1. Fees are as follows :—

	£	s.
Part I	3	3
Re-examination for referred subject	2	2
Part II	3	3
Special Fee :—		
Training Fee for Part II (to include Agency Fees) ..	10	10

The training fee for Part II will be payable on the completion of arrangements for practical work for the candidate, and will be applied for by the University.

2. All cheques should be made payable to the University of London, or Bearer, and crossed "Westminster Bank, Ltd., Tavistock Square, W.C.1, University of London Account."

3. A candidate who withdraws from Part I of the examination after the last date of entry, but not later than 1 May in the case of the June examination or 1 January in the case of the January examination; or a candidate who withdraws from Part II of the examination after the last date of entry, but not later than 1 July in the case of the July examination or 1 February in the case of the February examination, may apply for a refund of part of the entry fee paid, in accordance with the Regulations for the Return of Examination Fees (see General Regulations, p. ix).

SCHEME OF EXAMINATION

1. The examination is divided into two Parts and candidates are required to satisfy the Examiners in both Parts. **For Examinations in and after 1955** a candidate will normally be required to enter for Part II of the Examination within one calendar year of passing or being referred at the Part I Examination, but an extension of this period may be considered in individual cases on application to the Council for External Students.

2. No exemption is granted from any part of this examination.

3. All answers to examination questions shall be written in English unless instructions are given to the contrary.

Part I

4. Candidates will be examined in four subjects as follows :—

1. **Social History.**
2. **Social Economics.**
3. **Social Philosophy and Psychology.**
4. **Social Administration.**

5. There will be a three-hour paper in each subject, but the Examiners shall not be precluded from putting oral questions to any candidate in the subjects in which they are appointed to examine.

6. No candidate will be permitted to pass Part I of the examination unless he has shown a competent knowledge of each of the foregoing subjects, but a candidate who satisfies the Examiners in three of the four subjects may be referred in the fourth subject, i.e., he may be permitted to complete the examination by passing in the fourth subject alone on a subsequent occasion within the next two academic years on payment of the prescribed fee.

7. A candidate who fails in his referred subject will be permitted to re-enter once for the whole of the Part I examination on payment of the prescribed fee, provided that such re-entry is made within two academic years of the examination at which he was referred.

8. A candidate who fails at Part I is permitted to re-enter once for the whole examination on payment of the prescribed fee, provided that such re-entry is made within two academic years of the original failure.

9. A candidate who is referred at Part I may enter for Part II before passing in his referred subject. A candidate who is successful at Part II will not, however, be credited with his performance until he has completed Part I.

10. A candidate who fails at Part I and who re-enters and fails again, will not be allowed to enter a third time except with the special permission of the University. A candidate who is not given permission for re-entry or who after re-entry fails, will not be permitted to complete the examination on any subsequent occasion.

Part II

11. The second Part will consist of an oral examination on a report of 4,000 to 5,000 words submitted by the candidate on the practical work which he has carried out.

12. The report on practical work shall be in two parts, (a) a brief statement by the candidate of the importance to the community of each branch of work in which he has had experience, and (b) a critical study of a selected aspect of the work and of the problems involved. The candidate should select some aspect of social work of interest to himself and apply his practical experience to a study of it.

13. The Tutor will be required to furnish a confidential report on the candidate. This report should embody any assessment of the candidate made by the supervisors under whom he has worked, together with the Tutor's own opinion of the candidate's capabilities and appreciation of the problems involved in the work he has completed.

14. The oral examination will be based primarily on the report submitted by the candidate, but the Examiners will take the Tutor's report into consideration, and may also ask questions designed to test the candidate's understanding of the general implications of social work.

15. A candidate who fails in the Part II examination will not be allowed to re-enter except by special permission of the University. A candidate who is not given permission for re-entry will not be permitted to complete the examination on any subsequent occasion.

COURSE OF STUDY

1. The course of study for Part I must extend over not less than two academic years, except in such cases (e.g., University graduates in relevant subjects) as may be approved by the Council, and the course of study for Part II over not less than six months unless an exemption is granted by the Council.

2. The course of study for Part II shall consist of a period of six months in a student capacity in full-time practical work approved by the University. These six months need not necessarily be consecutive. At least three months should normally be completed after the examination for Part I, but the whole period may, subject to the approval of the University, be completed concurrently with the course of study for Part I.

3. Exemption from not more than three months' practical work may be granted in virtue of previous practical experience in recognized social work. Exemption is subject to the approval by the University of the nature of the work and of the conditions of supervision under which it was carried out. Each application for exemption must be accompanied by the name of some responsible person intimately connected with the work on which the candidate's application is based, and to whom reference may be made.

4. Candidates who are permitted to take Part I after a course of study lasting one year only will not be permitted to take Part II until at least six months after passing or being referred at Part I.

TIME TABLE

The examination will be conducted in the order shown on the time table, which will be sent to each candidate as soon as practicable after the entry closes.

NOTIFICATION OF RESULT

A provisional list of successful candidates arranged in alphabetical order will be published by the External Registrar in the course of the sixth week following the conclusion of Part I and in the course of the second week following the conclusion of Part II of the examination.

A mark of distinction, which will be indicated on the diploma awarded, will be placed against the names of those who excel in both parts of the examination.

A copy of the pass list will be sent to each successful candidate, and an individual communication will be sent to each unsuccessful candidate.

AWARD OF DIPLOMA

1. The reports of the Examiners and the Pass Lists shall be laid before the Senate for approval in October for the June-July examination and in March for the January-February examination.

2. A diploma under the Seal of the University shall be delivered to each successful candidate.

SYLLABUSES

1. *Social History*

Social development from 1815, including :—

The growth of democracy ; political and social influences on public policy and voluntary action ; the growth of public administration through the civil service and local authorities ; the labour movement and co-operation.

Economic expansion and its effects on the balance between industry and agriculture ; the rise of new professions and occupations ; the conditions of employment and the standard of living ; the national income and its distribution ; changing forms of property.

Development of social policy ; the relief of poverty and unemployment ; education ; industrial legislation ; housing and town planning.

Growth and distribution of the population ; the growth of towns ; changes in class structure ; the family ; the economic and social status of women ; the treatment of children ; the use of leisure and the growth of public amenities.

2. *Social Economics*

A study of economic theory and organization, with special reference to the problems that affect the standard of living of the wage-earning population.

(a) Elementary economic theory : the principles of demand and supply ; wages, rent, interest, and profits ; money and the price level.

(b) Economic organization :—

(i) Organization of business : forms of private and public enterprise ; competition and monopoly.

(ii) The labour market : the occupational distribution of labour ; employers' associations, trade unions and collective bargaining ; industrial disputes ; methods of wage payment ; the public regulation of wages ; employment policy and unemployment ; the standard of living.

(iii) The make-up of the national income : Government revenue and expenditure ; the balance of payments ; the finance of social services, national and local.

3. *Social Philosophy and Social Psychology*

SOCIAL PHILOSOPHY

Relations between social science and social philosophy. Law and morals. Rights and duties. Liberty and equality. The theory of justice, distributive and corrective. Theories of punishment. The moral basis of political authority. The legitimacy and limits of the use of force in politically organized societies. The problem of conflicting loyalties. Personality and the common good. The ethical aspects of marriage and the family. Educational aims and values. The rights of property. The ethical aspects of the relations between States.

SOCIAL PSYCHOLOGY

1. Introduction to psychological theory and methods.

Cognitive processes ; perception, judgment and reasoning. Subjective and objective factors of belief. Prejudice.

Types of response : reflex actions, instinctive and acquired reactions, learning. Emotion and sentiments. Temperament and character. Volition.

Phases in the growth of personality. Individual differences in intelligence, temperament and character, and the methods of assessing them.

2. Applications of psychology to the problems of social relations.

Psychological factors in group life. Co-operation and conflict. Problems of maladjustment and delinquency. The psychology of family relationships. Group mentality : public opinion. Propaganda. Social attitudes.

4. *Social Administration*

A study of the social services and their administration.

(a) Outline of central and local government, with particular reference to the social services ; functions of central departments, public corporations and semi-autonomous boards ; sphere of local government ; the powers and duties of local authorities. The relation between central and local authorities ; forms and methods of central control. Finance of the social services. The role of voluntary organizations in the administration of the social services ; their relation to statutory authorities. Selection and training of personnel for the administration of the social services.

(b) The social services ; their structure, scope and content ; the respective roles of statutory and voluntary agencies in the different services ; their relation to the individual, the family and the community. The principles and methods of social work. The role of the social worker.

The social services to be studied include :—

Social Security Services : National Insurance and Assistance ; family allowances. Health Service. Rehabilitation Services. Housing and Town and Country Planning. Education, including the youth service. Services for delinquents and for those in need of care or protection. Moral Welfare Services. Employment Services : Employment Exchange and Youth Employment Services ; outline of factory legislation ; industrial health and welfare. Specific services for particular groups, e.g., old people, deprived children, problem families. Services concerned with family welfare and marriage guidance. Cultural services and the provision of amenities.

UNIVERSITY OF LONDON



REGULATIONS

FOR THE

Ph.D. DEGREE

for External Students

These Regulations are revised in September of each year. In important matters affecting syllabuses two years' notice of change will be given ; but in all other matters candidates must acquaint themselves with the Regulations issued in the September preceding the date of their respective examinations.

Any amendments made by the Senate to these Regulations subsequent to publication are incorporated in a " Blue Slip " which may be obtained on application to the External Registrar.

All communications about External Examinations must be made to the External Registrar, University of London, Senate House, W.C.1.

Communications sent from the University to an individual candidate must be regarded as applying to that candidate only.

SENATE HOUSE
LONDON, W.C.1

September, 1953

INTRODUCTORY NOTES

1. The Degree of Ph.D. for External Students is conferred for research in the Faculties of Theology, Arts, Laws, Science (including Agriculture and Horticulture), Engineering (including Mining, Metallurgy and Chemical Engineering), Economics (including Commerce and Estate Management), in the Faculty of Music for Research in Music, and for non-clinical research in the Faculty of Medicine.

2. The standard is definitely higher than that of the Master's Degree in the same Faculty.

3. Graduates holding a Master's Degree in any Faculty, the D.Mus. Degree, or the M.D. or M.S. Degree, are permitted to enter for the Ph.D. Degree in accordance with these regulations.

4. The Ph.D. Degree in the Faculty of Music is described as Ph.D. (Research in Music).

RESEARCH FUND

The Senate has at its disposal a Research Fund from which grants may be made to individuals for the provision of materials and apparatus for specific projects of research. Any External graduate or student for an External Higher Degree who desires to be considered as an applicant for a grant should in the first place communicate with the External Registrar.

DOCTOR OF PHILOSOPHY

REGULATIONS FOR THE REGISTRATION OF EXTERNAL STUDENTS FOR HIGHER DEGREES

No candidate can be admitted to any examination for External Students unless he has been registered with the University for that examination.

REGISTRATION FORM

Every student who intends to proceed to an examination leading to a higher degree as an External Student must obtain from the External Registrar the appropriate registration form and must return this form, duly completed, with the registration fee on or before the date prescribed in the regulations for the degree to which he proposes to proceed.

CONCURRENT REGISTRATION

Except with the permission of the Council for External Students a student will not be permitted to register concurrently for two or more examinations. A student who is registered for a first degree or for a diploma or postgraduate certificate will not normally be permitted to register concurrently for a higher degree examination.

No student who is registered as an Internal Student or as an Associate Student may be registered concurrently as an External Student.

LATE REGISTRATION

Provided that the Council for External Students are satisfied about the reasons for failure to observe the date of registration prescribed in the Regulations, application may be accepted after the prescribed date on payment of the Late Registration Fee. In no case will registration be accepted after the last date for Late Registration prescribed in the Regulations for the degree to which the student proposes to proceed.

MODIFICATION OF REGISTRATION

A student who has been registered for a higher degree and who subsequently wishes to modify his proposals as, for example, by an alteration in the title, scope or content of his thesis or dissertation, must apply in writing to the External Registrar for approval of the proposed modification. The granting of approval for the modification proposed may, in some cases, be made subject to deferment of the entry to the examination to a date later than that originally approved.

TRANSFER OF REGISTRATION

Registration does not commit the student to enter for the examination on the date approved, or at all. Registration may be transferred to a later date without payment of an additional fee, provided that application is made not later than one month after the last date of entry to the examination for which he is registered.

A student who is registered as an Internal Student for a higher degree and whose application is approved by the University will be permitted to transfer his registration at any time on payment of the normal registration fee.

RE-REGISTRATION

A student who enters for the examination for which he has been registered and withdraws, fails, or is referred, will be allowed to re-register for a subsequent examination without payment of an additional fee, provided that such re-registration is effected within three months of the publication of the Pass List.

LAPSED REGISTRATION

A student who does not transfer or re-register by the appropriate date will be deemed to have allowed his registration to lapse, and should he propose subsequently to proceed to an External examination he will be required to register afresh as though he had not previously been registered.

CANCELLATION OF REGISTRATION

A student who is registered as an External Student for a higher degree and is accepted as an Internal Student of the University will be required to cancel his registration as an External Student and his registration fee will be refunded.

NOTIFICATION OF REGISTRATION

An official notification of registration will be issued to each student whose application for registration for a higher degree has been accepted. A student whose application for registration is not accepted will be informed and his registration fee will be refunded.

ENTRY TO EXAMINATION

Registration does not constitute entry to the examination. To enter for the examination for which he has been registered, the student must, on or before the date prescribed in the Regulations, obtain the necessary entry papers, and return them to the University with the examination fee.

FEES						£	s.
Registration Fee	..	..	..	..	..	2	2
Late Registration Fee	..	..	..	..	..	2	2

QUALIFICATIONS FOR REGISTRATION

Any graduate who has taken a first degree in this University may be considered for admission as a candidate for the Degree of Ph.D. in the same Faculty as that in which he took his first degree, subject to the following further conditions :—

1. In the Faculty of Theology either he must have obtained honours at the B.D. Examination or he will be required to take the papers of the B.D. Examination and to reach honours standard therein, such papers to be taken within a year after registration. Nevertheless, candidates who obtained the B.D. Pass Degree in or before 1937 may be registered for the Ph.D. in Theology on condition that they take two of the papers of the M.Th. Examination or two papers of an equivalent standard as prescribed by the University, within a year after registration for the Ph.D.
2. In the Faculties of Arts or Economics, he must possess qualifications not inferior to those required before proceeding to the M.A. or M.Sc. (Econ.) Degree in the same branch, or produce evidence satisfactory to the University of the standard he has already attained and of his ability to undertake the research.
3. In the Faculty of Arts for research in English (except in special circumstances to be determined by the University), he will be required to have obtained the M.A. Degree in English of this University, or to produce evidence of an equivalent training in research.
4. In the Faculties of Arts and Science for research in Education he will be required to have passed the M.A. or M.Sc. Examination in Education of this University, or to produce evidence, satisfactory to the University, of his competence to undertake research work of the standard required for the Ph.D. Degree in the field of Education.
5. In the Faculty of Arts for research in Slavonic and East European Studies (except in special circumstances to be determined by the University), he will be required to have obtained the M.A. Degree of this University in the relevant branch of Slavonic and East European Studies.
6. In the Faculty of Laws he must have obtained either the LL.B. Degree with First Class Honours or the LL.M. Degree of this University, or a degree of another University equivalent to one of these. In exceptional cases, exemption from these requirements may be granted.
7. In the Faculty of Music, for examinations in and after 1957, a candidate who has not obtained the B.Mus. Degree (Revised Regulations), will be required, before entering for the Ph.D. Degree, to pass a qualifying examination consisting of the whole or part of the B.Mus. Examination (Revised Regulations) and to reach a satisfactory standard therein.
8. In the Faculty of Science, he must possess qualifications at least equivalent to those required before proceeding to the M.Sc. Degree in the same branch, or produce evidence satisfactory to the University of the standard he has already attained and of his ability to undertake research. [A candidate who has not obtained the B.Sc. Special Degree with First or Second Class Honours, or an equivalent qualification, may be required to pass at a satisfactory standard in specified papers in the B.Sc. Special Examination before he is permitted to submit his thesis for examination.]
9. In the Faculty of Science for research in the History and Philosophy of Science, he will be required to have obtained the M.Sc. Degree in the History and Philosophy of Science. In exceptional cases

he may be exempted from this requirement, provided that he has published adequate research of a sufficient standing, but he may nevertheless be required to take some or all of the written papers at Part I of the M.Sc. Examination in the History and Philosophy of Science as a qualifying test.

10. For the Ph.D. Degree for non-clinical research in the Faculty of Medicine he must hold, in a branch of study akin to that in which he proposes to proceed to the Ph.D. Degree, the Degree of M.B., B.S., or B.D.S., or B.Pharm., or B.Sc.

The Senate may, in approved circumstances, admit to the Ph.D. Degree Examination in any Faculty External Students who have taken a first degree of the University in any Faculty open to External Students and who satisfy the other prescribed conditions, notwithstanding that they have not taken a first degree in the same Faculty.

A graduate who has not taken a first degree in this University, but who has satisfied the Examiners in an examination prescribed for the degree of Master in this University as an Internal Student may, subject to approval by the Senate, be admitted to the examination for the Ph.D. Degree in the same Faculty as that in which he holds the Degree of Master.

REGISTRATION AND APPROVAL OF THESIS TITLE

1. In the Faculties of Theology, Arts, Laws, Music, Medicine and Economics :—

(a) Not less than two calendar years before he desires to present himself for examination every graduate who desires to proceed to the Ph.D. Degree as an External Student must apply for approval of his candidature, setting forth on the prescribed form a statement of his qualifications, of his field of research, and the resources available ; the candidate should state as explicitly as possible at this stage the field of research and the libraries, archives, etc., which he proposes to use. The University will at the time of approval inform the candidate of the Faculty within whose purview the thesis will be deemed to fall.

(b) Not less than one calendar year before entry to the examination the candidate must submit for approval the exact title of his thesis. After the title of the thesis has been approved it may not be changed except with the permission of the University.

2. In the Faculties of Science and Engineering :—

(a) A candidate must normally apply for registration not less than four calendar years before submitting his thesis. Nevertheless, a candidate who can furnish satisfactory evidence of previous work in the subject of his thesis, and a candidate who can show that the time available for his research is adequate may, on special application, be permitted to submit the thesis at an earlier date. The minimum interval permitted between registration and submission of the thesis is two calendar years, with the exception that students in the Faculty of Engineering pursuing a full-time course of research in a teaching institution who apply for registration before 30 October, may be permitted to submit a thesis after an interval of two academic years, i.e., in June of the second year following.

(b) A candidate who has been registered for the M.Sc. or M.Sc. (Eng.) Examination and who subsequently transfers his registration to the Ph.D. Examination in the same field of study shall be permitted

to date his registration for the Ph.D. Examination from the date when he was initially registered for the Master's Examination.

(c) Before registering a candidate the University will, if it thinks fit, require him to consult an Adviser through the medium of the External Advisory Service. The Adviser may interview the candidate and make such personal enquiries into his research facilities as will enable him to judge whether the candidate is working on the right general lines.

(d) Not less than one calendar year before entry to the examination the candidate must submit for approval the exact title of his thesis and a short statement as to its subject matter. After the title and subject of the thesis have been approved they may not be changed except with the permission of the University.

3. No student who is or has been registered as an Internal Student for the Ph.D. Degree will be permitted to proceed to the Ph.D. Degree as an External Student except in special cases and with the approval of the Academic Council.

4. When the candidate submits his application for approval of qualifications and field of research, he must send with it a registration fee of £2 2s. If the application is approved he will be registered for the examination, and the registration will remain valid for five years. A candidate may then apply for registration again in the normal way and in accordance with the Regulations in force at the time.

THESIS

1. Each candidate must submit three copies of a thesis [two copies only will be required in the case of the Ph.D. Examinations in Medicine (non-clinical)]. The thesis must be written in English, and must comply with the following conditions :

(a) It must form a distinct contribution to knowledge and afford evidence of originality, shown either by the discovery of new facts or by the exercise of independent critical power.

(b) It must be satisfactory as regards literary presentation and, if not already published in an approved form, must be suitable for publication, either as submitted or in an abridged form.

2. The degree will not be conferred upon a candidate unless the examiners certify that the thesis is worthy of publication as a "Thesis approved for the Degree of Doctor of Philosophy in the University of London."

3. The thesis must consist of the candidate's own account of his research. It may describe work done in conjunction with the teacher who has supervised the work, provided that the candidate clearly states his personal share in the investigation, and that this statement is certified by the teacher. In no case will a paper written or published in the joint names of two or more persons be accepted as a thesis. Work done conjointly with persons other than the candidate's teacher will be accepted as a thesis only in special cases.

4. The candidate must indicate on his entry form how far the thesis embodies the result of his own research or observation, and in what respects his investigations appear to him to advance the study of his subject.

5. The candidate will be required to forward to the University with his thesis a short abstract thereof comprising not more than 300 words.

6. The candidate will not be permitted to submit as his thesis one for which a degree has been conferred on him in this or in any other

